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Editorial

Travellers returning from different countries in which they have been studying health education very frequently arouse our envy, and sometimes even appear to imply some criticism, when they enlarge with great enthusiasm on the magnificence of the health exhibitions they have seen. The question is often put to us : " Why don't we have the same in Britain ? "

The exhibits which appear to attract the greatest admiration are those connected with human anatomy and physiology, for instance the transparent men and women (and now, apparently, horses), for which our German friends are so famous. There are, of course, other aspects to this question, for some exhibitions which we ourselves have visited abroad tend to show a static character and to give information or to offer advice which has since become out of date. It was remarkable, for example, to see only three years ago an exhibit which urged mothers to feed their babies by the clock, and with an actual clockface included in order to reinforce the lesson. In this particular museum, there was displayed— in wax —a florid example of a disagreeable disease. This was surrounded on a Saturday afternoon by admiring family groups, including quite small children. An observation of the behaviour pattern was interesting. One and all gazed at this object, shook their heads slowly, and gave vent to the verbal expression of disapproval usually written as " tut-tut ".

It would, however, be ungenerous to enlarge further on the anomalies of health exhibitions, for when modern methods and media are used they undoubtedly have a valuable contribution to make.

The technique of exhibition is a skilled one and requires training and experience. That much will be evident from the articles which follow, each of which has been contributed by someone who is actively engaged in teaching or in health education in the field. This being so, there is a great need for advice which can be easily obtained centrally, and this is one of the functions of the Central Council for Health Education. We hope that this symposium on exhibitions will encourage those who are attracted to this medium to take advantage of the opportunities which present themselves in their own community.

PRODUCING AN EXHIBITION

An Exercise in Public Health Teaching

By S. P. W. CHAVE,
London School of Hygiene and Tropical Medicine

An exhibition as the focus of a teaching programme has long had a place in the armament of the health educator. There is no doubt that the step by step simplification which can be achieved by means of a well designed visual display can provide an effective medium for teaching, particularly where a relatively complicated subject has to be "got across". "Learning by looking" as exemplified in the visual aid is perhaps the contemporary variation of the adage that "seeing is believing".

But quite apart from the value of the exhibition to those who see it and learn from it, the production of the exhibition can itself provide a useful practical exercise for those whose work is to take them into the field of health education. This article describes the way in which this has been carried out at the London School of Hygiene and Tropical Medicine. For some years past the study group, or project method, has played an important part in the course for the Diploma in Public Health. In this, the class of sixty or seventy students is divided into groups of about ten, to each of which a staff tutor is attached. Each group then undertakes the study of some selected topic in the general field of public health. They meet regularly over a period of six to eight months until, towards the end of the course, they report their findings to a meeting of the staff and the class as a whole. On a number of occasions one of these groups has been given the task of preparing an exhibition on a prescribed subject which was of some interest and importance at that time. A variety of subjects has been treated in this way of which the following are but a few: Housing in Post-War Britain; The Care of the Young Child; Social Services in the Welfare State; A Century of the Medical Officer of Health; The Human Factor in Industry; Rivers in the Life of

the Community ; Fifty Years of the School Health Service.

In each case the preparation of the exhibition has followed the same general plan. First, there would be a general survey of the whole subject to provide a background of information for the group. About a month was usually devoted to this phase, the information being obtained mainly through a study of the literature. Then the subject would be broken down into its relevant parts or natural divisions, each of which would become the special responsibility of two students. For example, in the housing study, the pairs of students took up such aspects of the subject as high density housing, rural housing, the housing of special groups, housing estates and so on. With historical topics such as the School Health Service, each of the sub-groups was responsible for a ten year period in the development of the service. In the case of the Human Factor in Industry, the subject divided naturally into what we described as " Fitting the Man to the Job " (personnel selection, training and rehabilitation) and " Fitting the Job to the Man " (design of equipment, work methods and the physical and social environment of the work-place). The object of this stage of the project was to bring the students into direct contact with original source material. In the historical studies they had to deal with the writings of their period, for example, with the annual reports of the outstanding medical officers of health of a century ago. This proved to be a very rewarding experience, for beneath the dust of the years, there was found much to stimulate and inform the public health student of to-day.

With the groups concerned with the health or social services of the present time, this phase entailed a series of visits to see these services at work. These excursions were useful not only through the insights that they provided, but also in the contact and discussions which took place with those engaged in the field.

Week by week as the study proceeded, the students would gather together for a brief report from each of the sub-groups on the work in hand. These meetings served both to keep the whole group informed on current progress and also to provide a forum for much lively discussion around the subject. This period of study, observation and appraisal was usually spread over about two months, at the end of which each pair of students would prepare a concise written account of their part of the project. This would bring out what seemed to them to be the salient points which would need to be high-lighted in the exhibition. When put together these separate contributions made up a brief and well-

digested description of the subject as a whole. This was not only of interest in itself, it served also to provide the ground plan of the exhibition.

The next stage was devoted to discussing the way in which the written story could be depicted in visual terms, by means of photographs, charts, graphs and the like. It was necessary at this point to consider the setting and the general design of the exhibition. The hall in which these exhibitions are held at this School formerly housed a museum of public health. After the war it was decided to discard the permanent and somewhat static collection of exhibits and to devote the space to short-term exhibitions on subjects of current interest which could be mounted by the students themselves. The hall is furnished with large stands and wall-cases, the panels of which range in size from 15 to 40 square feet and are finished in light grey. The room has a glass roof and is fitted with fluorescent lighting.

The student group, with their preparations made thus far, would now hold all their meetings in the exhibition hall itself in order to familiarise themselves with the setting. The layout of the display would be drafted in outline and the various sections of the written account allotted their quota of panels, according to their relative importance within the general plan.

Then followed the collection of the material. Each pair of students was now mainly responsible for gathering together the material for illustrating their section of the exhibition. This, for the most part, they were well equipped to do through their work in the earlier, exploratory stages of the study. They were, of course, always alert to bring back anything which might also be useful in any section other than their own. Most of the material used in these displays consisted of photographs. These were obtained from many sources including the medical and lay press, photographic agencies, central and local government departments, and not least by the use of the student's own cameras. This material was enriched by charts, diagrams and sketches and by original manuscripts, letters, notebooks, portraits and other exhibits which were kindly loaned by their owners.

The collection of this material provided the students with a challenge, and called for the display of imagination, resourcefulness and ingenuity. In setting out to illustrate the historical aspects of their subjects they explored archives and sought out the relatives and descendents of well-known public figures of the past. One student's search for a portrait to complete a series of Ministers of

Health ended successfully in the private office of a Cabinet Minister. In this and in many other ways a wealth of material was gathered together. It was inevitable that at this stage it looked less like an exhibition planned on a single theme than a heterogeneous collection of pictures and other objects.

With this raw material in hand there followed the final stages, consisting of the selection and preparation of the exhibits and the setting up of the display, panel by panel. The selection of the material always involved a good deal of discussion among the students. It was at this point that the tutor had an important part to play in ensuring that the final result should not consist of a haphazard collection of isolated exhibits but that the whole presentation should have a fundamental unity of design. Stress was laid on simplicity and the need to ensure that every item displayed was directly related to the theme.

For the preparation of the exhibits themselves, the School has a well equipped photographic department, and a staff trained in the preparation of captions, charts, and graphs as well as photographs. Thus it was possible to obtain uniformity in the size, shape and mounting of the pictorial material to be exhibited. No item was included merely because it was available, but only if it was relevant, and had a worth-while contribution to make. With these principles in mind the lay-out of the panels would proceed. A judicious selection of the material, a balanced design enlivened by the careful use of colour would combine to produce, in the end, a simple but attractive presentation of the subject.

The exhibitions which were produced by our student groups in this way have been used primarily for teaching purposes within the School. On several occasions, however, they have been put on show to a wider public in different parts of the country and have proved to be of general interest. But equally their production has provided the students who took part with a useful exercise in the art of visual presentation which should prove of no small value to these future medical officers of health.

PLANNING AN EXHIBITION

By P. K. HENDY, Exhibitions Assistant,
Central Council for Health Education

WHAT is the aim of an exhibition ? To give pleasure ? To impart information ? To tell a story ? Or to persuade people to take a certain course of action ? It could be all or any of these, but to be of any value at all it must be attractive and interesting to look at.

It has been said that the basic rules of display are (*a*) to attract attention, (*b*) to interest and stimulate and (*c*) to create a desire for action, and in most cases this is true of exhibitions as well as of shop window displays. The only exceptions that come readily to mind are museums and art galleries where items are displayed simply because they are interesting or beautiful in themselves. No action on the part of the public is anticipated or indeed desired. Even with these, however, the first two rules apply.

Let us assume that you have already considered the various ways of putting over your message and have decided that an exhibition can be usefully included in your programme. Note the last phrase. An exhibition should not be required to stand alone, but should be part of a campaign which includes posters, leaflets, film and film-strip shows, meetings, etc.

Let us also assume that you have a certain sum of money and that you are allowing yourself reasonable time (not just a few weeks) to prepare and stage the exhibition.

The first rule, then, is to attract attention. In the case of exhibitions the initial attraction can be by various outside means, such as press and poster publicity, street banners, cinema slides, leaflets, loud speaker vans, etc. The presence of an important or interesting personality at the opening and on subsequent days is also worth while. But if the exhibition itself does not interest at once, the spectator may turn round and go without a second glance.

How can we attract people and make them want to see more ? In the first place it is important to decide on a theme for the

exhibition which can be suggested by a brief and stimulating title. Even if the exhibition consists of a number of different subjects it is still possible to link these together in some way and so achieve some sort of unity. The selection of the theme and title can depend on several factors—the type of person with whom we wish to communicate, the time of year, the location of the exhibition and, of course, the message to be conveyed. For instance, the title might be " Protect Your Child ", the exhibition including stands on immunisation, vaccination, food hygiene, accidents in the home, the right sort of clothing for winter, and so on. A repeated symbol could be used throughout the exhibition to suggest protection—a shield, a helmet, armour or even, in less solemn vein, gaily coloured umbrellas. Alternatively, the exhibition could be entitled " Health and Your Family ". Photographs of a family could be displayed in different situations to suit the subject, and the last caption might be " The Jones family takes advantage of the local health services to keep well and happy—Do YOU ? " If it is preferred not to identify the family all the shots could be taken from the back or three-quarters back view. Any photographs used in an exhibition must be good ones or the initial purpose of attracting attention and interest will be defeated.

Techniques

Once the subject and title have been chosen, thought must be given to ways and means of effectively illustrating the theme or message, and the following techniques might be considered.

Photographs.—A good photograph well presented can bring a display vividly to life. It should, however, be of reasonable size (photographs of less than 12 in. x 10 in., unless very carefully displayed, are not on the whole very effective).

You may already have some suitable photographs or you may wish to take new ones. If you can show local services and places, so much the better. It is sometimes possible to include a beautiful photograph which at first glance has no obvious bearing on the subject being dealt with. For example, attention was recently drawn to a small stand on " Clean Air " by displaying a large photograph of a family striding happily across a field of grass under a wide expanse of sky. Above the photograph in large letters were the words " Take a deep breath ! " and a smaller caption remarked " How lovely it would be to know that our town air was as clear and clean as country air . . . . "

Other ways would be to use photographs of people engaged in

various activities, either work or sport, to illustrate say, foot health ; a close up photograph of a happy young girl or boy to illustrate a display on nutrition ; a beautiful photograph of swans gliding on a calm lake could portray " serenity " and might be used on a stand showing the health and care of elderly people ; and so on. Such photographs can often be obtained from local newspaper or photographic agencies.

Try using photographs of different sizes, for this helps to avoid monotony and can be useful in stressing a particular aspect of the subject. Interest can be added by arranging for the photographs to stand away from the background instead of being pinned flat to its surface. If pins are used, however, map pins, push pins or matching drawing pins, all of which can be obtained in various colours as well as in black and white, are preferable to ordinary brass drawing-pins. Sticky tape should never be visible as it quickly collects dust at the edges.

Three-Dimensional Exhibits can add greatly to the effectiveness of an exhibition and can include :—

Actual Objects or Pieces of Equipment.—Take care to group these carefully and allow plenty of space round each item.

Models.—Apart from things like model rooms and dummy foods, life-size figures can sometimes be useful. Some modern display figures are very effective and you might find it possible to borrow these from a local store.

Dioramas.—These are three-dimensional scenes, partly modelled and partly painted, and are sometimes in the form of pictures with a false perspective. A simpler way of introducing a third dimension is to fix small models or actual objects to an existing photograph or drawing. This might be effective, for example, in a nutrition display where the addition of actual food or dummy food would increase its impact.

Paper Sculpture.—Some practice is required to produce really professional-looking work, but it is possible to use this technique in a very simple way. A flat paper cut-out of a hand, for instance, can be bent so that the fingers curl. A poster, illustration or caption can be " scrolled " at either end. Simple human figures can also be produced with a little practice.

Animation and Participation.—You may have noticed how mobile exhibits draw the crowds in an exhibition or shop window display, and it is well worth while including one or more of these. Units and activities that might be considered are :—

Rotating Drums Bearing Messages.—These can be vertical,

electrically or battery-operated on turntables ; or vertical or horizontal, operated by hand.

A stiff paper cylinder with a " ventilated " top can be rotated over the heat of a lamp bulb.

Mobiles.—Inter-related shapes (captions or illustrations) of thin card suspended on an almost invisible nylon thread will move gently in a draught of air.

Battery-Operated Displays.—Simple " one-message " displays can be made with one section which moves from side to side. This is operated by a small battery-driven " motor ".

Push-Button Devices.—A series of pictures or questions and answers can be illuminated by pressing a button, thus enabling the public to participate. An even simpler form of " teaser " display is to have the answers concealed by a hinged flap which has to be moved aside by the spectator. The very fact of having to do something to solve a problem will usually impress the answer on the mind.

Quiz Boards.—These are panels bearing questions and alternative answers wired in such a way that when a metal " peg " is placed against the correct answer a bell rings.

Demonstrations.—Shoe fitting, balanced diets, cooking to preserve vitamins, fashion parades, etc., come into this category.

Competitions.—These might be organised in conjunction with the local press, the results to be shown at the exhibition. Or they could actually be staged while the exhibition is in progress.

These are just a few ways of enlivening an exhibition, and once you begin to think about it, other interesting and stimulating ideas will, no doubt, occur to you.

Layout and Design

The actual layout and design of an exhibit is most important to our aim of attracting people. Any display is in constant competition with commercial work produced at a high cost and it is therefore preferable to use professional artists or students. It is sometimes possible to obtain the co-operation of art schools for this purpose. Considerable talent can, however, be found in offices and health departments and those who cannot command the services of professional artists might like to bear in mind that good design includes :—

Pleasant shapes and grouping
Good proportion
Attractive colours

Contrasts of colour, size and texture
Adequate space round objects
Clear, brief, legible captions
Effective lighting

Clarity is very important—what may be clear to you and your colleagues may not be clear to the people you are trying to reach. In the case of individual stands and displays, most are improved and made clear by having a focal point, one part being emphasised in a way which will highlight the message, and to which all other parts are subordinate. If a display looks confused, contains too many illustrations or objects and too much reading matter, the spectator will quickly lose interest. Any detailed information is better incorporated in hand-out leaflets which may be read at leisure. If, therefore, you have to use explanatory captions keep them brief and make them part of the design.

If your exhibition is a large one, you might consider, when you design the overall layout, reserving a space to be used as a "rest area". This could be furnished with comfortable chairs and a small table or two bearing leaflets.

When designing an exhibition never lose sight of your main objective, which is to "put over" your message in the clearest and most attractive manner possible.

C.C.H.E. Consultative service

The Central Council for Health Education started an exhibition exchange service in 1949 with the loan of a number of large stands to local authorities throughout England, Wales and Northern Ireland. Display material was issued regularly for mounting on these stands. They were, however, rather heavy and it was eventually decided that a lighter type of display might have a wider use. This led to the production of some light metal frames on which the display material (mounted on flat panels) could be suspended by means of hooks and screw eyes.

Fresh display material was produced from time to time, and when this service ended in 1956, fifteen different topics had been dealt with. The service was finally terminated owing to the high cost of producing new material and of storing and maintaining it in first-class condition for display. The light display frames and topic panels were offered free to those authorities who were at that time participating in the scheme and most of them retained the material for use in future exhibitions or clinic displays.

A light display screen which could be purchased by local

authorities and easily maintained by them seemed a practical idea, and so the pegboard triptych display screens came into being, and a series of " Make-it-Yourself " displays was planned. Three of these have so far been produced, printed in colour on stiff card ready for cutting out and mounting on the triptych screens. They are proving extremely popular and further subjects in the series are planned for the future.

The consultative service of the Central Council is available to local authorities who require information on any particular health subject or who wish to know sources of supply of display material. In cases where there is a choice of material available in the London area, the Council can also arrange for a suitable selection to be made on the local authority's behalf.

Suggestions can be submitted by the Central Council for the design and layout of displays, and authorities who wish to use this service might like to note that it is very helpful if they can give at least three weeks' notice. This allows time for assembling information, etc., and preparing sketches.

The following is a guide to the sort of information that an exhibition consultant needs :

(*a*) full dimensions, with a note of any obstructions such as windows, doors, pillars, etc. A plan would also help. In the case of shop window displays the height of the floor of the window from the ground should also be included.

(*b*) Type of stand or background, including colour and texture of surface.

(*c*) Lighting facilities

(*d*) Sum of money allotted

(*e*) Details, including size, of any material already available (including tables, counters, shelves, etc.)

(*f*) The message to be conveyed and a note of any existing ideas.

Summary

Some organisers of local authority exhibitions will already have devised a planning procedure based on past experience, and a few lucky ones may be in a position to employ professional help, but for those who have to cope with unfamiliar problems with a small and inexperienced staff the following summary may be a helpful guide. The chief points to be decided are :—

1. *The message.*—The main purpose of the exhibition is to present this message in a clear way which can be easily understood by the prospective audience.

2. *The title and theme* can do a useful initial job by attracting people and holding their interest.

3. *The material and means available.*—Some equipment, photographs or models may already be available. Other material may have to be obtained by using departmental facilities, by borrowing or by purchase.

4. *Techniques.*—Avoid monotony by employing different techniques—photographs, three-dimensional objects, art work, models, animation and audience participation.

5. *Design.*—Plan the exhibition carefully and in detail beforehand. Do not leave the arranging of material until the day before the opening. This will leave too much to chance and will probably lead to a confused and uninteresting display. Do not forget that design should also include captions. A "script" should be written and lettering should be kept as brief and clear as possible. There are various ways of producing lettering and the chosen method will obviously depend on the available budget. Some ways are—professional signwriting, photographed typeset, photographed typewritten lettering, 3-D cork or plastic lettering, transfer lettering or stencils (used either with a brush or with a pen).

If local authorities require further information about any of the techniques mentioned above, or help with design and layout, this may be obtained from the Central Council for Health Education.

Flannelgraphs, displays, models of past exhibition stands and some examples of animated exhibition units may be seen at the Central Council's Visual Aids Centre in Tavistock House, and visitors calling by appointment can have various techniques demonstrated.

DISPLAY AND PAPER SCULPTURE

By D. LYNTON PORTER, Education Officer,
Central Council for Health Education

Our seeing and selection

WHEN we consider the countless stimuli applied to our ears, eyes and nose during the course of a working or leisure day it is not really surprising to find that most of us are very selective in our seeing, hearing and even smelling. If it was not so we would be overcome by the vast confusion of music and noise, placard and advertisement, perfume and odour. This is largely unconscious training, it would seem, but conscious training and discipline are necessary too. This may be best experienced in the classroom next to a busy road or railway line, where new staff and children may be at first quite disturbed by the movement and noise, but soon settle their attention on to the task in hand. We all know so well that we only "hear" the grandfather clock when it has stopped, or strikes a ridiculous hour.

With the visual stimuli it is possible for us to list the most effective techniques, and in ascending order of interest we would find first the flat, poorly designed black and white overprinted posters so often used to advertise the local dance, sale of property, or wrestling bout. These, with their unhappy lack of composition, design of type and abundance, are ignored by the majority. To add interest and attraction, colour should be used, either in the subtle shades and hues, or in the brilliances of primary colours with the rare master touch of contrast or the vivid clash of opposing colours. Originality, composition, design of the whole and lettering (even "gimmicks" like mis-spelling) may further catch the eye. If the third dimension of depth and roundness is introduced, we have the advantages of the additional interest of using realistic or symbolic shapes, models, cartoon or puppet figures to further our aims.

Display design

Display may be an extended poster, or a small exhibition. They should alike be simple in design, clear in exposition and accurate in text. In designing the biggest problem is undoubtedly the selection of phrases for the text. For example, in constructing a display where the aim is to attract attention to the early signs of some cancers, how succinctly can the wording be phrased ? The title may be " Cancer ", with the sub-heading " Time is Vital in the fight against Cancer ". To one side we may have a message encouraging co-operation with the general practitioner, and on the other an indication of the danger signs. These may read : " It is possible to help doctors to cure more cancer. Cancer like most diseases shows signs. If you know these early signs it may help to save your life." Then : " Unusual bleeding or discharge. A lump in the breast or elsewhere. A sore that does not heal. Persistent change in bowel or bladder habit. Change in a wart or mole. Persistent cough or hoarseness. Persistent indigestion or difficulty in swallowing." Can this message be written more simply ? Is it as it stands sincere and accurate ? Should it be written at all ? These are some of the first problems that beset the display designer.

Repetition of shape and idea : Theme

Our human nature is most fond of repetition. It pleases the eye and ear, and we are familiar with it in poetry, music, art, and indeed in all design of man, and of nature. Dare we say, too, that it also gives us a second opportunity to catch something that we have missed at the first telling or seeing ? Repetition gives the renewal of acquaintance that we may have already woven into our near or remote memory. Some of the repetitive catch phrases we see on posters, hear on the radio, and now see and hear on television may be easily recalled : " . . . . . is good for you ", " . . . . . please," " . . . . . needs none for the pot," " . . . . . satisfy." These slogans need no name to be instantly recalled.

In health education we have limits to space available, techniques, finance and opportunity. We are making considerable progress, though, and we would easily recognise and complete : " Smoking and . . . . . ", " Diptheria is . . . . . ", " Coughs and sneezes . . . . . ". I firmly believe in the encouragement of these health education slogans, repetitive themes and the use of cartoon personalities in health education generally

and in the construction of successive displays. If four displays a year are to be circulated, a useful theme would be the seasons with these topics : diet in pregnancy for spring ; care of dairy milk for the summer ; clothing and protection for the autumn ; and fighting infection for winter. In designing these, one is guided by the theme into a good repetitive feature, and attractive colourings. Summer colours, daisies and milk-bottles in paper sculpture, autumn leaves and autumn colours with paper sculpture figures—these almost suggest themselves for consideration. If twelve displays are to be built up over the months, then the months themselves could be the main theme, with suitable topics for each month.

The pegboard triptych

The C.C.H.E. pegboard triptych has been designed for small displays, and I feel it is a boon to the designer. It stimulates the planning and channels thought into an attractive centre panel for the focus of attention, with the side panels for supplementary comment and text. It is free-standing, can be easily transported with most displays safely within, and may be illuminated with strip lighting. As it is made of pegboard, exhibits can be easily pegged or tied on to the neutral colour background. The exhibit may often be made more attractive by giving the third dimension. Emphasis is added to a statement which is raised from the background by wooden or cardboard blocks.

Paper sculpture

A development of the third dimension is the use of paper sculpture, in white card and coloured paper. Although time and patience are consumed in making it, the result may be most effective and eye-catching. Paper sculpture is basically curled or folded paper stuck to a rigid base or background of cylinders, cones or cubes. With figures the head, trunk, women's skirts, arms and legs are made of tapering cones of various sizes, while the neck, and men's trousers and jacket arms may be made from tubes or creased tubes. Hair, features, pockets, leaves, walking sticks and an endless range of articles can be added in other colours and shapes. It is advisable to use quick drying glue or cement, and to avoid the use of sticky tape which may show, and attract dust. Much can be done by joining the paper with slits and frictional holds. Raffia, straw and string may be incorporated, with coloured card or paper backgrounds. The string may be threaded in a multitude of

patterns through the peg holes to create striking patterns or features such as staircases, windows or doorways. Repetitive designs are labour saving, for the first serves as the pattern for the rest, which may be cut out together. There are many excellent books on these subjects, which will repay the designer well with short cuts and better techniques, while originality, and patience will create really attractive and worthwhile displays.

Gloucestershire County Council's dental exhibit at the Three Counties Agricultural Show in 1957. An article by J. F. A. Smyth, published in our November 1958 issue, gave an account of dental health education in Gloucestershire.

THE HEALTH EXHIBITION

By F. St.D. ROWNTREE, Health Education Officer,
Essex County Council.

Of the many techniques available to workers in health education and public relations the production of exhibitions undoubtedly offers the greatest challenge to skill and ingenuity and makes the biggest demands on time and energy. The snap decision to produce an exhibition is a trap into which the unwary all too often fall, and yet when the technique is properly exploited, it can be one of the most profitable educational media. It should only be used, though, when the display of pictorial or three-dimensional visual material is more effective than the spoken or written word.

A criticism often levelled at the health educator is that he "preaches to the converted", but through the medium of the exhibition contacts are often made with the "unconverted" who attend as part of the anonymous "general public". It is also possible through the exhibition to focus attention on particular problems and to raise interest coupled with subsequent community action and activity. Examples of this are exhibitions on such topics as immunisation, home safety, etc. Where community action is desired, as will be the case with most health exhibitions, there is greater success when post-exhibition follow-up takes place.

A further purpose served is the enhanced status of the organisation responsible for a well planned and executed project ; this can be of great value in generating greater sympathy and understanding of the work of the organisation. The converse is of course true and this should be borne in mind before commitments are rashly accepted by the uninitiated.

People often question whether the costs and time involved in exhibitions are justified or would be better spent on day-to-day work. The answer is an affirmative, but only when the specific aims and objects of a particular exhibition are clearly defined and when there is adequate planning of the exhibits.

Budgeting for a major health exhibition raises the most serious

difficulty in the way of the organisers. It is extremely difficult to lay down any definite figures, for costs will vary with the size of the exhibition, the amount of material to be produced by commercial firms or outside bodies, the quantity of material available on loan, staff, etc., and may range from as much as £10,000 for a site 50 ft. x 20 ft. in one of the large London exhibition halls to a few pounds for a village hall project. For a site covering approximately 250 ft. x 100 ft., £500 would be required as a minimum. This figure takes into account the fact that a considerable amount of material would be borrowed and that much of the other material would be produced by the professional and technical team. The question of finance should not deter any organisation from undertaking some form of exhibition work, for much can be done on the proverbial shoe string, the quality of the exhibition depending on the planning of the project and the use which is made of available material.

Let us compare the value of exhibitions with the more generally used approaches in health education. These can be broadly classified into the impersonal and the personal. The most commonly used impersonal approach through poster displays, notices and printed leaflets presents little opportunity for human contact or discussion of ideas and in the main provides a means of supplying, but not necessarily imparting, factual information. These methods are of little help in producing desired attitude changes. On the other hand the personal approach through lectures, talks, discussions and interviews—particularly those taking place in the home or a familiar environment—does provide opportunities for the exchange and assimilation of new ideas, with a consequent change of attitude and practice.

The health educator is less concerned with providing purely factual or academic information than with developing attitudes and practices favouring positive health, and he is more likely to use and support techniques which will bring this development about. The reverse may sometimes be true of the public relations officer, who is most concerned with providing information about his service with a view to developing informed and sympathetic opinion in the general public.

Thus a large exhibition or display consisting of purely factual material will have little effect on the health practices of the individual. One containing a synthesis of personal and impersonal techniques may result in a significant increase in knowledge and understanding coupled with a distinct change in individual habits. An important

By courtesy of the Borough of Leyton Public Health Department.

One of the stands " Diary of a Public Health Inspector " at the Borough of Leyton Public Health Exhibition, 1957.

difference between the exhibition and other techniques is that the subject matter of the exhibition is dealt with in isolation and away from distracting influences. This provides opportunities for dealing visually with subjects not normally amenable to other techniques.

Types of exhibition

The broad heading " health exhibition " covers a number of different types of health display ranging from the comprehensive project which aims to provide information on all aspects of human health, and which covers many hundreds of feet of floor space, to the small portable unit dealing with one aspect of a problem. The exhibition may be a permanent one, in which case regular change-over of material would be taking place or it may be open to view for only a few days or weeks. On the other hand, the exhibits may be mobile and would frequently be moved to different sites. The aims and techniques of production will differ in each case and it is

important to decide from the outset into which category a proposed exhibition will fall.

There is considerable difference of opinion on the desirability of using complex or multiple themes as opposed to the single broad theme. Pressure is often brought to bear on the organisers to include topics which may be totally irrelevant. Multiplicity of themes can often lead to confusion or mental indigestion in the mind of the short stay or casual observer, and in general should be avoided. It is more desirable to give a general impression than to attempt the display of considerable quantities of detailed information. The section of the public able to absorb and retain detail at exhibitions is extremely small and in the main is composed of professional or " interested " visitors. There should, however, be opportunities for the supply of detailed information if requested. This can be done by leaflets and information sheets, questions to staff in attendance at strategic points or at an information desk or bureau. If the requested additional information is not available on the spot, follow-up letters can be sent. On the whole it is desirable to have a main theme dominating the whole exhibition. Any sub-themes should be related and essential to the appreciation of the central topic. When a single theme is presented from a variety of view points the observer is more likely to go away retaining an impression of the main idea.

In deciding the content and layout of an exhibition the hoped for " retained idea " should be envisaged and the display material designed accordingly.

Decisions concerning layout depend, of course, on the exhibition site, the amount of floor and wall space, availability of lighting and electrical points, and the amount of time and money which can be devoted to the exhibition. This information should be known well in advance of any detailed planning, with a view to avoiding unnecessary alterations and re-arrangements.

Presentation of material

Once the central theme and proposed subject matter have been decided the main problem is the method of presentation to be adopted. This can vary from a simple panel display of captioned photographs to large working sets or elaborate mechanical exhibits. Whatever the approach, the main object should be to obtain maximum value from the space, time and money allocated. This does not necessarily mean covering every available inch of wall or floor space with exhibits. On the contrary, the more spacious an

exhibit can be made to appear the more effective it will be. Small areas overcrowded with material repel rather than attract the visitor. Large areas of plain wall or background, when properly used, become part of the display and add emphasis to the material shown (good examples of this can be seen in the windows of leading couturiers).

Before the detailed layout is confirmed it is useful to produce a true-to-scale " mock up " or model of the exhibition. This is invaluable in arranging material, main points of interest and visitor circulation. All material intended for display should be evaluated before use. If it appears that any item does not meet the needs and level of understanding of the viewing groups, modifications must be made or the material discarded. No part of the display should be used for its own sake but only to support or amplify the main theme. This does not of course apply to floral and similar decorations which, when judiciously and sparingly used, enhance the aesthetic appeal of any display. The arrangement and presentation of the material determine the interest aroused and the clarity with which the main theme or idea will be appreciated. Arrangement should be such that the impression gained from the first objects seen arouses curiosity and interest leading to further investigation of the main exhibition. An arresting or dramatic exhibit, sometimes known as a " shopper stopper ", can be used to attract attention.

Each unit or display panel ought to be complete in itself yet linked in some way to the next so that the visitor is drawn on with maintained interest, slowly building up a picture of the general theme. This requires careful planning and investigation, and scale models are valuable. It is worth while remembering, too, that if each section is designed as a semi-complete story it is possible to send the exhibition on tour, piece by piece, in smaller display sites such as schools and clinics. As the visitors enter the exhibition they should be led from the known to the unknown ; many people are deterred when suddenly confronted by new information or strange visual experiences and pass quickly on, oblivious to items which may be of direct personal value.

Where possible, presentation should be varied, but without over-use of ostentatious mechanical or visual " gimmicks ". Variety can be achieved by the use of different shapes, sizes, lighting and general arrangement. An attempt should be made to achieve visual balance in the layout so that a pleasing whole is presented to the viewer. Ugly contrasts in shape or colour and extreme regi-

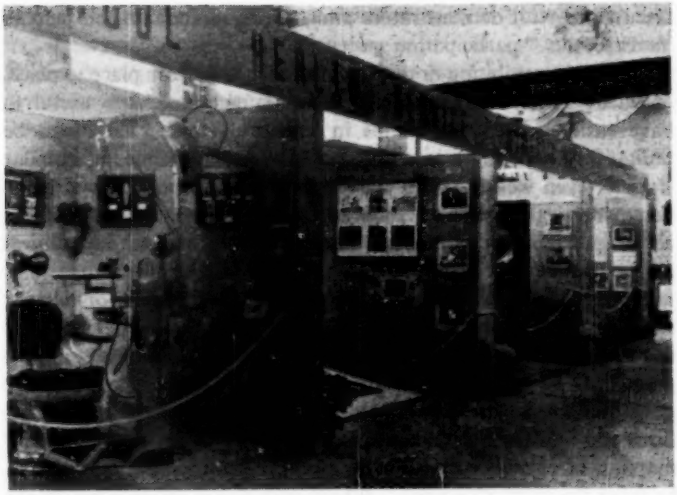
mentation or mathematical precision and repetition in layout are to be avoided. Material is best grouped round the " optical centre " which is slightly higher than the mathematical or " dead " centre. The laws of pictorial composition should be observed. Much detailed information on this subject is contained in most standard works on photography or painting, where many useful ideas can be found.

Realism, actual or simulated, is desirable and, in certain circumstances, highly dramatic presentation is useful. But over-use is best avoided as too much distraction is produced. The " live " exhibit is better than one that is static or dead, for movement adds realism and gives a feeling of life and vitality. Small electric motors, some of which can be powered by torch batteries, are useful activators and are a worth while expenditure. Simple lines and arrows connecting parts of a display give an impression of movement and draw the eye of the observer to points of emphasis. These lines and arrows should lead in to the exhibit ; if the eye is drawn outwards attention is quickly lost.

Emphasis can be given to particular items by their placement in the general layout ; overcrowding of exhibits tends to cause loss of emphasis. Contrast of colour and lighting, size and use of captions all help to draw attention to the one or two main points of emphasis in the display. Too many attention points distract the eye of the viewer and lead to loss of interest. The general impression to be aimed at is one of simplicity and clarity.

Captions should have large easily read print, they should be short and to the point, telling the story in as few words as possible. Each caption should be surrounded by free space which makes reading quicker and simpler. Supplementary information can be provided as short secondary captions with smaller lettering or in the form of take-away leaflets. Closely written or typescript sheets are to be avoided as part of the display. Experience has shown that these remain largely unread by the vast majority of visitors.

The wide use of the third dimension differentiates the exhibition from other forms of visual presentation, and where possible the material shown should be the real article or a two-dimensional version with simulated depth. Supporting material, captions, etc., may be flat. An illusion of depth can be created quite easily by raising two-dimensional cut-outs or photographs away from their backgrounds by means of shallow wood blocks. This not only gives a feeling of depth but adds emphasis.



Major health exhibition, showing use of cubicles ; each unit is complete in itself and can be used elsewhere.

Reference has already been made to the use of colour in emphasising certain points. Colour also contributes to the overall eye appeal. Backgrounds of plain pastel washes are the most useful as they form a pleasant neutral contrast to the brighter or more strongly coloured exhibition materials. Plastic emulsion paints have been found suitable for backgrounds as they are quickly applied to most surfaces and are easy to wash or retouch. Strong colour contrasts, particularly in large areas, are best avoided as they offend the eye.

Where possible the exhibition should be supplemented by other activities—film shows, panel discussions, quizzes, poster competitions, talks, etc., bearing in mind that topics for women's organisations and schools are best arranged during the day, with activities aimed at men or married couples reserved for the evenings.

Visitor participation should be introduced as much as possible for this produces an added feeling of realism ; interest is stimulated and there is a greater personal involvement in the theme displayed. Even a caption " Do you know ?" introduces participation, simple press button question and answer units take the process a stage further. Competitions and quizzes, opportunities for personal

discussions with demonstrators and staff in attendance, all help to increase the " participation potential ".

Where the exhibition or display is to be moved from place to place, or where a number of exhibitions is contemplated, it is useful to have easily constructed stands in a central store. These can be built of slotted angle iron on the Meccano principle, of tubular steel, or even wood. If they are made to fit special backs of hardboard or pegboard the stands and backgrounds are available at all times and can be used for the display of almost any subject matter.

Display items are sometimes too difficult for medical or nursing staffs to produce and the expenses involved when commercial firms are contracted are prohibitive. It is possible, though, to borrow a great deal of well-produced and extremely effective material from government departments, voluntary organisations, commercial firms and other health departments. Whilst this borrowed material may not be entirely suitable, with modification it can often be made to serve the particular need. Where material is specially produced it is worth bearing in mind that it may be used later on other sites. In this way the value of the work is increased and there is a considerable saving in cost.

The background against which an exhibition is staged will have a considerable bearing upon its success. The time of year, amount of space available, accessibility of site, conflicting functions or events, topicality of subject matter and comfort conditions of premises all directly affect the project. When choosing or accepting premises these points should be considered. It is important to remember, also, that certain sites may be unacceptable to large sections of the community. Church or political halls are less desirable than civic buildings or libraries, which have a " neutral " character.

Steadily increasing publicity is essential from the time the exhibition dates are confirmed and preliminary planning is put in hand. As soon as possible, a press notice intimating that the exhibition is being arranged, and invitations to prominent local figures, should be sent out. This usually secures " bookings " for the opening ceremony. Invitations to organisations and schools should also be sent out well in advance. If the services of a V.I.P. can be obtained for the opening ceremony further valuable publicity is secured. Public notices and posters should not be displayed until two or three weeks before the opening date, at which time special preview facilities should be offered to the press. The

editors of local newspapers are usually most co-operative and a preliminary discussion will often prove helpful. Assuming that the exhibition is to last for one or two weeks, auxiliary events should be arranged which will maintain interest and attract further visitors.

During the whole course of the exhibition staff should be available to conduct groups of the public round and to answer questions on any points raised. The officers chosen should be specially trained and briefed for their work. They should be neither too aggressive nor, on the other hand, too shy or retiring in their approach to the public. Experience soon shows which members of staff have a flair for this type of duty. Extremely valuable work in public relations can be done by the officers present, new attitudes are formed by the visitors towards the health team, whom they may possibly not have met outside clinical situations ; this is particularly true in the field of dental health.

Evaluation

Exhibitions, like any other propaganda technique, may or may not be successful. A great deal depends on the preliminary planning and investigation into the needs and interests of the sections of the community which it is hoped will visit the function. Material presented should not only include what the organisers feel the public ought to see, but what the public wants to see. Pre- and post-evaluation are essential to success and are valuable information for future undertakings.

General organisation

The initiative in the organisation of major exhibitions usually comes from one or two enthusiasts who believe that the undertaking will solve all health education problems. When work commences, it is soon realised that this is not necessarily so, and as demands on time become more pressing, enthusiasm tends to wane, particularly if all responsibility is left to these same few persons. Ideally, a major exhibition should be a team project with every member contributing some part. In this way, there is a spread of the heavy work load and invariably an enhancement of personal and professional relationships. Thus the project becomes a form of in-service training, as members of the working party or team become aware of aspects of intra-departmental work and personalities with which they have had little previous contact. One person should act as co-ordinator of the team. This is usually the

lot of the health education officer, who should arrange progress meetings at regular intervals.

Complete and detailed preparation is essential to success and experience has shown that planning should take place well in advance. The following steps have been found necessary in exhibitions organised recently :—

1. Evaluation of the needs of the community for education best undertaken by the exhibition technique.
2. Confirmation of dates of exhibition, construction and dismantling of displays.
3. Decision on main theme ; space, time, money, and ready made exhibition material available ; formation of working party or team. (It is useful to retain centrally a store of basic exhibition stands together with a directory of sources of ready made display items which could be borrowed.)
4. Preparation and breakdown of main exhibition into sections.
5. Production of scale model or " mock up ".
6. Allocation of responsibilities for production of particular aspects of the project.
7. Arrangements for publicity and public relations ; invitations to V.I.P.'s., schools and other organisations.
8. Allocation of duties in connection with construction and conduct of exhibition.
9. On completion of the exhibition, thorough evaluation and follow-up assessment.

Modifications and additions to this sequence of events may be found necessary, depending on particular circumstances.

In conclusion, it may be said that exhibitions, if undertaken at all, should be undertaken properly, and neither time nor effort should be skimped. An inadequate or carelessly arranged project will do more harm than good, whereas a carefully prepared and well executed exhibition with a proper follow-up well justifies the time, trouble and expense involved.

A HEALTH EDUCATOR LOOKS AT BRUSSELS

By JOHN S. OWEN, M.B., Ch.B., D.P.H., Dip.H.Ed.

THE average visitor to an international exhibition is not particularly attracted to health education displays, although he may gaze admiringly at television screens showing some major technical advance such as modern heart surgery. Several pavilions at the Brussels exhibition could satisfy his curiosity in the glamorous side of medicine and he would go home feeling that medical science was increasingly able to look after him should he fall sick. But he would have gained little insight of responsibilities for his personal health.

Credit must, however, go to Belgium for a display of eye-catching 3D wall pictures emphasising the value of good personal hygiene, healthy recreation, strong family life and sound nutrition. This display was well sited in the main building of the Belgian section and, it is hoped, would be seen by many people.

Spending a penny

International exhibitions provide wonderful opportunities for educating the public indirectly in healthy living. It is a pity so many opportunities were lost at Brussels. One remembers with satisfaction the free toilet (including washing) facilities at the Festival of Britain Exhibition in 1951. To spend a penny at Brussels cost two francs with an additional franc for a couple of paper towels. And what of food hygiene? Hundreds of visitors each day queued for the Marie Thumas self-service meals. Hundreds more were interested spectators in the gallery above the restaurant. What did they see apart from the slick conveyor belt system of food transportation? They saw meat and salad sorted by the hands of the girl assistants. But perhaps the average visitor did not notice these things—he had not been conditioned to do so.

Spiritual health

Spiritual health was well catered for in the pavilion of the Holy See. Thought and imagination had clearly been brought to bear on the lay-out of this pavilion. From creation—with its exhibits of living birds and fish—to the present day, with its photographic illustrations of current social and moral problems, one's interest was sustained.

The Protestant Churches were also represented at Brussels, but their exhibits did not stand out, and the services of one of the guides was needed for an understanding of the theme and sequence of the photographs.

Back to reality

After walking round the exhibition on four successive days, one's enthusiasm for the modern streamlined, rather abstract, presentation of themes began to wane. So it was a welcome change to come across, quite unexpectedly, a small display of work contributed by pupils from a Belgian convent school. This carefully executed work demonstrated the effective use of magazine cut-outs and flannel in illustrating basic principles of hygiene and physiology. Even the most critical health educator could feel satisfied.

THE 1959 SUMMER SCHOOL IN HEALTH EDUCATION will be held from 18th to 28th August at Neuadd Reichel, Bangor, North Wales, on the theme THE DYNAMIC APPROACH TO HEALTH EDUCATION. The programme includes group discussion, practical work and visits of observation, and among the speakers will be Professor Fraser Brockington, giving the Inaugural Address ; Dr. Norman MacDonald, on The Prevention of Smoking by Group Discussion Methods ; Mr. O. J. E. Pullen, H.M.I., on The Present Status of Health Education in Schools ; Mr. F. St.D. Rowntree, Health Education Organiser for Essex, on The Organisation of School Health Weeks ; and an expert from the U.S.A., on Accident Prevention. Inclusive fee £22. Full details from Central Council for Health Education, Tavistock House North, Tavistock Square, London, W.C.1.

TRAVELLING EXHIBITIONS AND HEALTH MUSEUMS IN TURKEY

The following article has been received from the Under-Secretary of State of the Ministry of Health, Turkey.

ACHIEVEMENTS in the field of health education in Turkey are developing from day to day. Systematic activity in this field began with the establishment of the Turkish National Committee of Public Health Education, at the suggestion of Monsieur Viborel, Secretary-General of the International Union for Health Education of the Public. The Committee tries to co-ordinate health education activities undertaken by various official and special voluntary organisations. There has been considerable progress towards the establishment of a Health Education Institute where health educators will be trained, and it is expected that this Institute will begin to operate in the near future. The Red Crescent Society has taken charge of activities in the field of first-aid, and by means of travelling exhibitions the Society is obtaining satisfactory results both in the field of curative medicine and in health education.

Travelling exhibitions of the Red Crescent Society

Twenty-six million people live on the productive land of Turkey, which covers about 780,000 square kilometers. There are 67 provinces, more than 500 districts and 40,000 villages, and although there are official health organisations in all the provinces and districts, services and personnel are not adequate for villages which are many kilometers apart and where small numbers live. Where the land is covered with mountains and forests, it is very difficult for villagers to come in contact with the health services available in the districts.

In order to examine people living in districts far away from such health services and to distribute medicine to them free of charge, the Red Crescent Society took into consideration the

geographical characteristics of our country and decided to set up travelling exhibitions, beginning in the summer of 1955. Within the summer months of the years 1955, 1956, 1957 and 1958, the travelling exhibitions have visited 44 provinces, including the very far ones such as Kars, Hakkâri and Van, have examined 150,000 people and have treated some of the suitable cases. In four years the Red Crescent Society has spent more than 1,000,000 Liras on the examination and treatment of people through travelling exhibitions.

Six travelling exhibitions set up in July, August and September of the year 1958, have visited 11 provinces, examined 53,129 patients, distributed medicine free of charge to 37,372 patients, and also dispensed prescriptions to 16,764. In 1958 the Red Crescent Society spent 300,000 Liras on the travelling exhibitions, which are in vogue in every part of the country.

Organisation of travelling exhibitions

The travelling exhibitions are generally staffed by 4 doctors, 4 nurses, 1 technician, 2 workers and 3 drivers, and each at present has two ambulances and one large truck. Cone-shaped canvas tents are allotted to these exhibitions as shelter for staff and supplies and for carrying on various activities. They are equipped with medical apparatus for making simple laboratory tests—urine analysis, blood counts and sedimentation tests. They do not yet have mobile x-ray apparatus, but provision of this is to be considered later.

A special manual of directions is prepared for these travelling exhibitions, and they carry on their activities according to these directions.

Health education is deemed important, as well as curative functions, and the travelling exhibitions' most productive work is probably in this field. The physicians and nurses attached to the exhibitions give lectures to the people on how to protect themselves against prevalent diseases, and last year thousands of people participated in these lectures, given out in the fields in places visited by the exhibitions.

Health museums

Health museums have been established in various regions of Turkey to give information on the importance of health and to teach the steps that must be taken for the protection of health. Nine health museums are at present operating, and during 1958

People visiting Gaziantep Health Museum.

were visited by almost 750,000 people. Health education brochures are issued to people visiting the museums.

Posters and models are displayed in these museums on such subjects as : tuberculosis, trachoma, contagious disease, venereal diseases, nutrition, vector control, dangers of alcohol, maternal and child health, hygiene of housing and food, human anatomy, etc.

Izmir museum, being in the field of the International Fair, and Ankara museum, being in the field of exhibitions, are continuously visited by people during the seasons when the fair and exhibitions are held. During the Izmir International Fair, health films are shown at night in the garden of Izmir Health Museum.

A mobile health museum on maternal and child health has recently been established, and is shown to people in various provinces.

The Ministry of Health considers that an important and useful service in the field of public health is provided by these health museums, and has prepared a programme for the establishment of new museums.

THE GERMAN HYGIENE MUSEUM, DRESDEN

By ROLF THRÄNHARDT, Dr.med., Scientific Director.

MEDICAL science has succeeded by means of hygienic and therapeutic measures in raising the average length of life in all highly developed countries to more than 70 years. Although the resources of therapy are not yet exhausted, nevertheless this development has reached a certain limit. By comparison with the animal world we know, however, that the average expectation of life in humans should be in the region of 120 years. Hence our attention turns more and more to prophylaxy. But from prophylactic measures more or less passively accepted not a great deal more can be expected either. People must be educated out of a passive attitude and into an active attitude towards hygiene, in order to use, by individual motivation, all the possibilities for maintaining health that modern medical science offers. Only conscious personal action can enable them in the course of a healthy way of life to make sure of long life and healthy old age. In view of this health education will assume more and more importance in all countries.

Medical science is thus presented with a educational problem, to be solved with the accustomed scientific exactitude. But here a new field opens up, one which is by no means yet thoroughly recognised by medical specialists. Whereas a few pioneers of health education used to occupy themselves with such questions, to-day all doctors and other members of the medical professions must do so, and even enlightened laymen as well.

In Germany, the idea of public health education has a certain tradition. As early as 1911 the first International Hygiene Exhibition took place in Dresden, and the second followed in 1930/31. Both exhibitions attracted lively international participation and did in fact become a model for all similar events in the world. With these the name of the German Hygiene Museum, Dresden, is closely linked. Up to 1930 the setting up of such a health museum had been merely an idea, but with the opening of a

permanent exhibition building in 1930 it became a reality. Thus the German Hygiene Museum in Dresden became a concept which was soon known throughout the world. It was, however, still a partly private undertaking, and for a long time did not win the co-operation of all health authorities. One section of the medical profession was actually opposed to its activities because they feared an increase in quackery and a lessening of their own income.

At the end of the war, on 13th February, 1945, the German Hygiene Museum fell, with the town of Dresden, in ruins and ashes. No one could at that time suspect that only two years later the German Hygiene Museum would again be sending through the country well built health exhibitions for the education of the public in the then Soviet-occupied zone of Germany. The foundation of the German Democratic Republic and the creation of its own Ministry of Health, naturally increased the sphere of activity of the German Hygiene Museum, which from now on, as the central institute for medical enlightenment of the first German worker and peasant state, had to lead in the health education of the public on a scientific basis, and was to a certain extent responsible for carrying out this education.

Many countries already have central bodies for health education. Nevertheless, the German Hygiene Museum still occupies a special position in that besides the functions of a scientific institute, it also

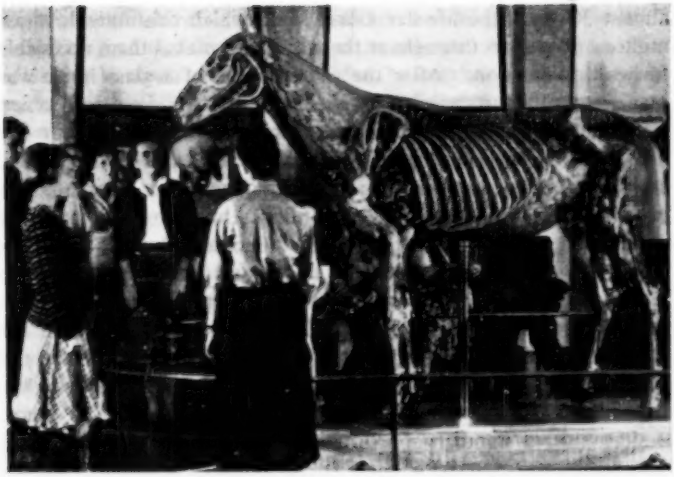
fulfils the function of producing biological and hygiene educational material. Here lie the great advantages of this institute, for it is thus independent of other workshops and has built up its own staff of specialists who develop the educational material which is sought after throughout the world.

The tasks of the German Hygiene Museum and Central Institute for Medical Enlightenment, fall into five groups :—

1. Scientific research into education methods appropriate to the various age-groups and population strata.
2. Elaboration of the educational programme and guidance of all organisations and groups working in the field of medical enlightenment.
3. Planning and manufacture of health education material.
4. The carrying out of an educational programme, mainly by means of health exhibitions, lectures and printed material.
5. Development and production of biological educational material for both general and specialised schools and for universities.

Scientific research is the newest branch of the work of the German Hygiene Museum. In this field there is comparatively little previous direct experience. Starting from the conviction that all education must begin in childhood, the problem was posed of developing educational methods appropriate to children. As a result of this work were produced, among other things, children's health calendars, which are achieving growing popularity with young and old, though they can only be considered as a beginning. This calendar is directed both at children and at adults. It contains two sheets for each month, with hints for parents printed on the back. In addition each sheet has a tear-off coloured postcard with a health hint presented by means of a graphic illustration and an easily remembered verse. The postcards can be sent to friends and acquaintances, thus giving the health hints a wider circulation. Further material for children is at present being developed.

Health education of the public in the German Democratic Republic is not the concern only of the organs of the state health service. The German Red Cross, the trade unions, youth organisations, the forces of the National Front, and the Society for the Spread of Scientific Knowledge include health education within the framework of their overall task. It is not the place here to describe the various methods involved. They all depend on the fact that educational activities must be directed towards an aim, in order to have permanent success. Here the work of the Central



Institute begins again, for it must establish links between all the organisations and people working in health education. At the present time this can be done only by means of an information sheet which, within certain limits, goes to all interested people, and which also contains hints and suggestions on technique. This second task of the German Hygiene Museum is, again, comparatively new, and still has many possibilities of development.

Most of the medical and health education material used in the German Democratic Republic is either actually produced in the German Hygiene Museum or prepared there for printing. In the forefront are health exhibitions, not only held under our own direction, but which can also be borrowed or bought. They are very popular, for they make it possible for the public to gain the necessary knowledge at play, as it were. These exhibitions, which maybe on a large or a small scale, include, besides a range of striking posters and placards, plenty of models, preparations, wax mouldings and apparatus, which arrest the attention of the visitor and in many cases also call for some action in order to experience a schematic representation of one physiological process or another. Push-buttons, cranks, lighting effects, projection of colour slides, and so on, thus become teaching aids. Expert guides, brochures and notices help to increase the depth and impact of the exhibition. One of the most essential and attractive exhibits has been for

almost 30 years the life-size Glass Man, which continues to draw millions of visitors throughout the world and makes them accessible to health education. After the war a model of a glass horse was made specially for the rural population, and this was soon joined by a glass cow. In all these transparent life-size models the models the position of the most important blood vessels and nerves, and the skeletal system, can be seen. The internal organs are explained by means of tape recordings, and are automatically illuminated. Glass figures from the German Hygiene Museum are to-day found throughout the world and are provided by the German Hygiene Museum with tapes in the appropriate language.

In most cases workers of the Central Institute undertake the organisation and setting up of the health exhibitions. Inside the German Democratic Republic ten exhibitions, dealing with the most varied topics, are continually moving from place to place. Besides this, a number of exhibitions are organised abroad, and the educational material of the German Hygiene Museum is known in the Balkan countries, India, Egypt, Mongolia, China, Vietnam, France, Sweden, Finland, to name only a few.

In the German Hygiene Museum at Dresden, there is a permanent exhibition covering an area of some 4,000 square yards, whose various sections provide a general view of the structure and function of the human body and the maintenance of health. The comparatively extensive material cannot be assimilated at a single visit, and so a number of visits are necessary. There can be hardly anyone visiting the town of Dresden, which is now being rebuilt, who has not included the German Hygiene Museum in his programme of sightseeing.

In addition to these larger exhibitions, the German Hygiene Museum also has a number of small exhibits, concerned only with a strictly limited topic, which are packed in crates and lent to interested people. These small exhibits are lent, in preference, to works and also to rural communities and serve in the organisation of health weeks or similar prophylactic activities. Among the topics are, for example : cancer ; to smoke or not to smoke ; tuberculosis ; alcohol—friend or foe ; health of the housewife ; school health ; the baby.

The photograph series of the German Hygiene Museum are well known at home and abroad. In recent years many series of colour transparencies on a great variety of medical topics of general interest have appeared. So far there are 42. These all consist of single transparencies arranged in series, and their advantage over

filmstrips, which are certainly cheaper, lies in their greater durability and the fact that the sequence can be varied to suit individual lecturers. These series can be purchased or borrowed. An explanatory leaflet, with a description of each picture is included, and this can be used as the basis of a talk. Organisations and individuals make use of this important visual material. A few examples of topics are : physiology of the higher nervous system ; muscle system ; heart and circulation ; hygiene of dwellings ; hygiene of water and drainage ; our teeth.

The printed material published by the German Hygiene Museum is widely circulated among the public, and includes a popular scientific series entitled " Little Health Library ", notices, posters, pamphlets, etc. We may also mention the popular scientific paper, costing only 10 d.Pf., which appears in large editions under the name " All for your health " and enjoys great popularity.

There is of course close co-operation with the radio and the German Television, Berlin-Adlershof, in the preparation of popular scientific programmes.

In the educational work of the German Hygiene Museum the Sunday morning health education talks occupy a special place. They regularly attract up to 1,200 people, are given by outstanding scientists of the Republic, and set a standard of method and content for the whole German Democratic Republic. These talks, most of which are accompanied by slides or films, often form the basis of the educational brochures mentioned above. In a much shortened form, some of these talks are also broadcast on the wireless.

The development and production of the extensive educational material mentioned naturally requires a large staff and well appointed workshops. Of the total of 350 employees of the German Hygiene Museum, more than half are occupied as experienced specialists in the workshops, where almost all the relevant trades are represented. Here a number of the models and wax mouldings originally developed for education purposes are manufactured and made available as teaching media to schools throughout the world. Their production is supervised by experienced educationists, and their technical quality is known throughout the world. Teaching charts, transparencies, wax mouldings, are available in unbreakable synthetic materials.

The German Hygiene Museum is thus an important cornerstone in the health service of the German Democratic Republic, and an enormous factor in the cultural life of Dresden. Its large lecture rooms and halls serve not only health education, but also

the needs of medical and scientific congresses. Important concerts and other cultural events also bring very many people to the building.

The work of the German Hygiene Museum in Dresden is not intended to serve only the welfare of the public in the German Democratic Republic. Great value is always placed on co-operation with other institutes of similar character throughout the world. The German Hygiene Museum has friendly links with a great many countries, and wishes to make these links ever closer and more intricate. Only intensive co-operation of all peoples, of whatever community system or political outlook, can bring permanent improvement of world health. The German Hygiene Museum is always ready to make its contribution to this end.

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FLUORIDATION ROUND THE WORLD

By GERALD H. LEATHERMAN, D.M.D., F.D.S.R.C.S. Secretary General of the Fédération Dentaire Internationale, and J. A. ELLIS, M.A., Assistant to the Secretary General of the F.D.I.

At the beginning of 1959, the Secretary General of the Fédération Dentaire Internationale asked the fifty-six member associations of the Federation to send him information on fluoridation in their particular country. From the replies he received from the associations and certain individuals belonging to the F.D.I. Commission on Dental Research and from information emanating from Dr. M. M. Chaves (Brazil), the Ministry of Health (United Kingdom) and Dr. Paulo da Silva Freire[1] (Brazil), the following survey has been prepared.

The first section of the survey, published in this issue, is a review of how far the principles of fluoridation are applied in the six regions of the world, namely, the Americas, Africa, South-East Asia, Western Pacific, Eastern Mediterranean and Europe. The second section shows the attitude of the official health authorities—whether undecided, positive or negative—towards the question of fluoridation, so far as is known. A third section indicates the attitude of the professions, both dental and medical, towards the problem, and the fourth and final section gives a brief review of the trend of public opinion. Sections 2, 3 and 4 will appear in a later number.

How extensively is fluoridation applied or planned? what methods are used?

Although the principle of fluoridation as an effective means of reducing dental caries is accepted by some responsible health

[1]P. da Silva Freire. *Water fluoridation in Brazil and other Latin American countries.* Supporting document WHO/DH/13 prepared for WHO Expert Committee on Water Fluoridation, and available on request to W.H.O.

authorities and their advisers, it has not yet been implemented on a large scale in many countries.

AMERICAS

Fluoridation is practised most extensively in the U.S.A. and Canada. In the *U.S.A.*, as at June 1st, 1958, 1651 communities were obtaining water from nearly 900 different water supply systems using fluoridation. The total population served was approximately 33 to 34 million. Among the compounds used in this fluoridation are : sodium fluoride, sodium fluosilicate (also known as sodium silicofluoride), hydrofluosilicic acid, and in one or two instances, hydrofluoric acid or ammonium silico-fluoride. There are two general classes of fluoride feed equipment used : solution feed equipment and dry feed equipment. In addition, there is widespread use of topical application of 1% of sodium fluoride to teeth by local public health officials and private dentists ; prescription of tablets (Karidium) and concentrate liquid ; liquid concentrate dispensed by druggists to parents which can be added to the daily intake in the diet of children. Furthermore, in the U.S.A., there are over 300 communities of approximately 4 million people in which the water is naturally fluoridated. Dental fluorosis occurs in 400 areas in twenty-eight states. Other communities in the U.S.A. are at present considering the adoption of water fluoridation. One in four of the population has the protection of fluoridation.

In *Canada*, one in seventeen of the population drinks fluoridated water. Twenty-eight municipalities, with a population of approximately one million, have controlled fluoridation of their water supplies. A considerable number of plebiscites have been or are being taken in municipalities, upon the subject, some successful and others failures owing to the active work of anti-fluoridationists. There are also some legal technicalities to overcome in certain provinces before much more progress can be made. In these provinces the subject has become political and as a result it is difficult to make progress. The fluoridation of water is the only method which has been approved by the Canadian Dental Association, but there are two other methods which are being actively promoted. Firstly, a firm is manufacturing an appliance to be placed upon taps. Pressure has been brought upon the Association to give approval to this method, but it has not done so, as it considers it would be necessary to have inspection for such appliances, which are expensive and the activity of a commercial firm. Secondly, several firms are trying to promote the use of

fluoride tablets and the Association considers that such tablets, if used, must be under strict control by prescription of a qualified medical man or dentist. Cases of fluorosis have been reported in Alberta.

In the countries of *Latin America*, some method of fluoridation is used on a small scale in Brazil, Chile, Colombia, El Salvador, Mexico, Panama Canal Zone and Venezuela.

In *Brazil* in the city of Baixo Guandú (State of Espirito Santo), with a population of 5,000, a fluoridation project of the water supplies was started in 1953. Sodium fluosilicate is added by dry dispenser, the adequate dose being 0.8 p.p.m. on account of the average annual temperature. Fluoridation is also planned for the city of Taquara (State of Rio Grande do Sul). This State has adopted a Bill regulating fluoridation in all public water supply treatment stations and giving a credit of 15,000,000 cruzeros for carrying out the project. The second fluoridation project, promoted as in Baixo Guandú by the Special Public Health Service (SESP), began operation in Palmares (Pernambuco) with a population of 15,000, in February 1957. A dry dispenser for sodium fluosilicate is also used and an identical dosage of 0.8 p.p.m. is adequate, taking into account the average annual temperature. Fluoridation is planned for a few cities in the State of São Paulo. The SESP is considering the possibility of using sodium fluoride in view of its lower price and the existence in Brazil of deposits of this salt.

In *Chile* a fluoridation demonstration project promoted by the Rockefeller Foundation has been in operation in Curico since 1953. In this scheme, sodium fluosilicate distributed by a dry dispenser is used. Fluoride concentrations are carefully controlled. Studies of the fluoride content of public water supplies have been made in the whole of Chile and a country-wide 4-year plan of water fluoridation has been prepared. Funds were budgeted in 1956 to start fluoridation in two provinces. An engineer of the U.S. Public Health Service visited Chile as part of a Latin American tour to investigate the possibilities of starting small fluoridation projects in schools of public health, to be utilised for the demonstration of the method to the engineers studying at the schools. This is a World Health Organisation project.

In *Colombia*, in centres run by the Servicio Co-operativo Interamericano de Salud Pública (SCISP) in the rural areas, the topical application of fluorides was introduced in 1946 and 5,000 complete series of applications were made. In the dental health service in Bogotá topical applications of fluorides are not used because the

fluoride content of the water in the city is not known. In 1953 the SCISP initiated a fluoridation project in Girardot (population 40,000), adding 1 p.p.m. of sodium fluoride to the water and using a solution dispenser. As, however, the water already contained 0.2 p.p.m. of natural fluorides, this amount was later reduced to 0.8 p.p.m. Fluoridation has also been considered for the second city in Colombia, Medellin, where a new water plant is being built. As its water supply is at present drawn from six different sources, fluoridation would be difficult.

In *El Salvador*, the second city of the republic, Santa Ana (population 97,000), introduced the fluoridation of its water supplies in 1956, mainly as a result of the personal initiative of a Ministry of Health dentist working in the city, who influenced the local authorities to get funds to start the project. The dentists working in the dental service run by the Maternal and Child Health Division of the Ministry of Health have received directives that topical applications are to be given to children aged between six and nine years, but as they are of the opinion that this would give no benefit unless preceded by a series of applications at the age of three, and no auxiliary personnel is used, it is obvious that only a very small proportion of school children will receive topicals.

In *Mexico City* the dental services use an assistant trained " in service " for topical applications of fluoride.

In the *Panama Canal Zone*, the cities of Panama and Balboa were the first in Latin America to introduce fluoridation. This was in 1950. The United States Government was responsible for these projects.

In *Venezuela* the Health Units and Mobile Units use the method of topical applications and this is also the method used sporadically in the National Institute of Dentistry—the organisation responsible for the dental health of school children in the city of Caracas. In May, 1962, the National Institute of Sanitary Engineering in Venezuela started a fluoridation project in Guanase (population 3,500). A solution feeder is used to add sodium fluoride to make up the fluoridation concentration to 1 p.p.m. It is interesting to note that there are " mottled enamel " areas around Lake Maracaibo, with concentrations of fluorides in the water running as high as 6 p.p.m. and in one community, Lagunillas, the water is being diluted with fluoride free water in the proportion necessary to get 1 p.p.m. concentration.

Two fluoridation projects in Latin America have been interrupted owing to lack of fluorides. In January, 1955, as a result of the

initiative of the engineer in charge of Public Water Supplies, fluoridation was started at one of the sources supplying *Guatemala City*. The Dental Society supported the idea, but fluoridation was interrupted six months later for the reason mentioned. The same fate has befallen the fluoridation project in San José, *Costa Rica*. A study of the fluoride content of water supplies in *Guatemala* has been made and this revealed that most of the waters have some fluoride—about half of the optimum content, the concentrations ranging from 0.4 to 0.6 p.p.m., a few waters showing concentrations as high as 2.2 p.p.m.

Some other countries in Latin America are planning fluoridation projects. In the *Argentine*, Buenos Aires is to fluoridate its water supplies, but it should be noted that elsewhere in the republic, certain localities such as La Pampa, the eastern part of the Province of Buenos Aires, Cordoba, Catamarca, La Rioja, Santiago del Estero, etc., are affected by chronic dental fluorosis.

In *Paraguay* the dentists working in the health services recommended that fluoridation equipment be installed in the water plant to be constructed in Asunción and due to be completed in 1960. This recommendation was accepted by the Ministry of Public Health and passed on to the Corporation of Sanitary Engineering in Asunción and a fluoride has been ordered for the plant. In *Peru*, a dispenser donated by the Pan-American Sanitary Bureau is to be installed in Callao.

In the *Dominican Republic*, the national dental association recommended the fluoridation of water supplies in 1956. Similarly in *Cuba*, fluoridation has been approved by various congresses and has the support of the Ministry of Health, but as yet nothing tangible appears to have been done.

A determination of the fluoride content of water supplies on a countrywide basis has been carried out by the Division of Sanitary Engineering in *Nicaragua*. The highest content amongst the seventeen cities in the survey was in Managua, with 0.7 p.p.m., and in view of the very high mean annual temperature it is thought possible that the natural concentration is the optimum for the climatic conditions.

No communities in *Uruguay* are at present fluoridating water supplies and there is a small area of endemic dental fluorosis—Fraile Muerto.

Before completing the survey of fluoridation in the Americas Region it should be mentioned that dental fluorosis seems to occur fairly widely in the territories adjoining the Argentine and has also

been found in the *Bahamas* and *Barbados*. In the *West Indies* as a whole fluoridation has never been considered. A fluoride survey of all water supplies in the Caribbean area was taken in 1954 under the auspices of the Caribbean Commission. A report was issued in 1955.

AFRICAN REGION

So far as can be ascertained the only scheme in operation in this region is in the *Union of South Africa* at Germiston, a municipal area on the Reef. Sodium fluoride is used in this project. Great interest has been shown in this scheme but it appears that no further schemes are being planned at present.

Fluoridation has been under consideration for some years and has been approved in principle in *Mauritius*. The completion of essential administrative details is now awaited.

In this region are to be found some areas where the natural fluoride content of the water is very high. In *Kenya* the concentration is as high as 100 p.p.m. so that in this area de-fluoridation is being studied. A concentration of 0.7 p.p.m. is regarded as ideal in view of the high average temperature. Following research into dietary habits as a possible explanation of the differences in the effect of fluoride in the European, Asian, and African races living in Kenya, it would appear that the higher the protein content of the diet, the lower the effect of fluoride. There is a difference between meat eaters and vegetarians. In one tribe with a 100% protein diet from fish, hippopotami and crocodiles found in Lake Rudolph, round which the tribe lives, and whose water contains 13.0 p.p.m. dental mottling was not more than the average seen in people drinking water with fluoride concentrations of 4 to 6 p.p.m.

Tanganyika also has naturally high fluoride areas, the concentration in some rivers being as high as 30.0 p.p.m. and in one instance 45.0 p.p.m. In the Northern Province fluorosis among cattle has become a problem and it has also been reported in human beings. In some areas with no fluoride in the water, fluoridation has been contemplated for some time, but as the diet of the African population in these areas is deficient in calcium, with a consequent detrimental effect on bone development, it was decided to improve the nutrition before commencing fluoridation.

Areas of dental fluorosis are to be found also in the *Cape Verde Islands* and in South-West Africa.

WESTERN PACIFIC REGION

In this region which is closely associated geographically with South-East Asia, fluoridation is steadily extending in its use. In *Australia*, two towns at present have fluoridation programmes : Beaconsfield, Tasmania, initiated in September 1953, and Yass, New South Wales, initiated in June 1956. A number of other towns are interested, such as Taree and Wingham, whose Councils have voted in favour of fluoridation. In the Beaconsfield project, sodium silico-fluoride is used in a solution feeder and in Yass sodium fluoride is fed by a Chlor-O-Feeder.

In *Hong Kong*, although there is no fluoridation scheme in operation yet, the fluoridation of all water supplies in the urban areas was approved by the Hong Kong Government for the financial year 1958/59. Twelve sets of dosing equipment were ordered during this financial year and fluoridation will begin in mid-1959. Sodium silico-fluoride is to be used to bring the F ion concentration from approximately 0.02 p.p.m. to 0.8 p.p.m. average through the year, the actual concentration to be varied half yearly to allow for seasonal variations in temperature and humidity.

There are very few places in *Japan* where the principles of fluoridation are applied, except for some people of the academic world who use it experimentally. There is only one place where fluoridation has been used experimentally for the last six years. At one time several cities planned to fluoridate the water supplies but this plan was not implemented. In the only scheme in existence a solution of sodium fluoride is used, this being distributed by a volumetric feeder. Dental fluorosis has been reported in certain areas of Japan.

In the *Malay Peninsula*, fluoridation was recommended to the Government in Singapore in 1953 and a scheme was started in May, 1956, using a dry feed machine. The concentration of fluoride is 0.7 p.p.m., this amount being regarded as the optimum for the climate.

At Hastings in *New Zealand*, a town of approximately 20,000 inhabitants, a fluoridation project under Medical Research Council supervision has been in progress since 1953. In 1956, the New Zealand Government set up a Commission of Inquiry to report on the benefits to dental health, disadvantages, practical methods, powers of local authorities, etc., as regards the question of fluoridation. The general conclusion reached was that " Widespread use should be made of the fluoridation process for the purpose of achieving an urgently needed improvement in the present

serious state of dental health in New Zealand". The Commission recommended that "a decision to fluoridate public water supplies should be left to the communities concerned", and that "a national body should be established, charged with the duty of encouraging, advising and assisting local authorities in regard to the installation and maintenance of fluoridation plants. It should have the authority to require compliance with appropriate and uniform standards, and those standards should be laid down by the Government". A Fluoridation Committee has since been set up and it numbers amongst its members the Director General of Health, the Director General of Dental Services (Army, Navy and Air) representing the New Zealand Dental Association, a nutritionist, engineers, laboratory workers, a consultant physician, as well as members of the dental profession and local civic authorities It addition to the Hastings project, five local authorities have approved fluoridation, eight local bodies have approved fluoridation in principle, one local authority has approved fluoridation in principle, but the Council's decision appears to be in doubt, two local authorities have deferred consideration in this matter, two have decided that the issue will be the subject of a referendum at the next local body elections, and four local authorities have rejected fluoridation. Of these four, two have rejected it on the grounds that the Government should decide the issue and one has done so on the grounds that fluoridation is not practicable until the existing water supply is extended and modified. The method employed in the Hastings scheme is an apparatus using sodium fluoride in the form of a solution which maintains a fluoride concentration of 1 p.p.m.

As an alternative to water fluoridation in New Zealand, tablets containing 2.21 mgms. sodium fluoride are available for over-the-counter sale at most chemists. The Department of Health has removed sodium fluoride from the schedule of poisons. Such tablets are available in individual communities as an interim measure until fluoridation of public water supplies is implemented. The Chairman of the Fluoridation Committee, who is also the Deputy Director General of Health prepared a circular "Letter to Mothers" concerning the use of fluoride tablets. An interesting fact is that the Anti-Fluoridation Society in New Zealand supports the use of fluoride tablets on the ground that "any voluntary method of this nature is quite in accordance with democratic principles."

In *Sarawak*, fluoridation has been under consideration for some

years. The level of fluoride to be used will be decided after investigation of the total fluoride intake in view of the high average temperature and degree of humidity.

SOUTH-EAST ASIA REGION

From the information available the principles of fluoridation do not appear to have been applied at all in the countries of this region. There are no schemes in operation at the present time and none is in the planning or experimental stage.

In *India*, many areas show a fairly high incidence of mottled enamel and this phenomenon is universally to be found amongst children in areas where the natural fluoride content of the water is around or exceeds 1 p.p.m. It has been estimated that the optimum concentration required for caries control without mottling is between 0.5 and 0.8 p.p.m. Dr. K. L. Shourie has suggested that the low incidence of caries in India as compared with other countries may be due to the ingestion of fluorine which is very commonly found in the drinking water and also to the low intake of Vitamin C, calcium and other food factors which have been shown in various communities and animal experiments to mitigate fluorine intoxication. Studies are being carried out on the effect of using condiments, flavourings, etc., derived from sea water (rich in fluorine) and of moistening all carbohydrates, except sugar, in curries, the results of which, in Shourie's opinion, may relate this method of fluorine ingestion to the low incidence of dental caries.

EASTERN MEDITERRANEAN REGION

In this region as a whole there are quite a number of natural fluoride areas. In *Algeria*, *Tunisia* and *Morocco* the water supplies are affected by fluorides in a particulate form, blown from the large phosphorite deposits.

In *Cyprus* the fluorine content of the water shows a considerable range from 0.1 to 3.2 p.p.m. the quantity of fluoride in the water diminishing as the elevation increases.

In *Egypt* fluoridation is still under study regarding the different water supplies. There is a survey scheme planned by the Ministry of Public Health and the W.H.O. Adviser. One city only, Alexandria, adds fluoride artificially to the main water supply. The natural fluoride in the water supplies varies from 0.1 to 0.7 p.p.m.

The lack of a piped water supply in *Iran* makes it impossible for water fluoridation to be contemplated. The Ministry of Health

in Iran has advanced the theory that the relatively low incidence of dental caries amongst children in Iran may be due to the habit of tea drinking amongst children there from a very early age. Laboratory tests indicated an amount of fluorine in tea of 20 mgms. and more per litre. Drinking one cup of tea, volume 100 c.c., would, according to their theory, be equivalent to drinking 2 litres of water containing 1 p.p.m. of fluoride. (In his research, Clark found large amounts of fluorides in tea samples from Ceylon.)

In *Israel* there are mottled enamel areas owing to the high fluoride content in the local water supplies. The natural fluoride content in the water supplies in this country has been investigated and the concentration found to vary from as low as 0.45-0.30 p.p.m. to 1.50-0.70 p.p.m. Amongst high fluoride content areas are Kiriat Haim and Kfar Baruch. A project is under way in Israel to fluoridate a community where the water supply is low in fluorine. In general, it appears that the fluorine problem could not be solved in Israel in this way because of the small water supplies. The city of Tel Aviv presents another difficulty in that its water is supplied by more than fifty wells with a different fluoride content. Fluorine tablets have been considered, as have topical applications, but the latter method is difficult to put into practice owing to lack of trained personnel. Dr. Gedalia at the Hebrew University—Hadassah Medical School, Department of Hygiene—is working on fluorine metabolic studies of children aged 1 to 6 years and of expectant mothers. The results in children indicate that they store up a considerable fraction of the ingested fluorine, the fraction decreasing with increasing age. When the results are obtained as regards the latter group, it will be decided whether it would be desirable to prescribe fluoridated salt or fluoride tablets for expectant mothers.

EUROPEAN REGION

No fluoridation project, experimental or other, is to be found up to the present in the following countries : *Denmark*, *France*, *Greece*, *Northern Ireland*, the *Republic of Ireland*, *Norway* and *Spain*.

As far as *Denmark* is concerned, some communities seem to be interested, but there are apparently no definite plans. A Government Expert Committee under the Home Secretary has studied and reported on the question of caries prevention by means of fluorides in Denmark. All but two of the twelve experts covering the medical, dental, biochemical, nutritional, legal and technical

fields, recommended that communities be given permission to fluoridate their drinking water if they so wish and if they can produce satisfactory control measures. The two opponents were the directors of waterworks, and their objections were largely technical and economic in nature. Experimental fluoridation of milk is recommended for areas with small or no waterworks. Rigidly controlled use of tablets is recommended for low-fluoride areas when no other fluoride additions are made and when topical application cannot be carried out. The Home Secretary has not yet taken action but it is expected that the whole question will be regulated by Parliament in the form of special legislation probably this year.

As regards *France*, it appears unlikely that any action will be taken in the near future.

In *Northern Ireland*, certain water authorities have been considering the desirability of providing space for fluoridation plant in the new water undertakings they are planning.

In the *Republic of Ireland*, it is understood that the Department of Health is preparing legislation to permit local health authorities to fluoridate public water supplies. A Fluorine Consultative Council reported in favour of the project early in 1958, and at that time the Government indicated its acceptance in principle of the Council's recommendation.

A plan has been worked out for adding fluoride to the drinking water in a town in the central part of *Norway* and the field work in connection with the division of the conduct pipes is almost completed and the special technical equipment is now being installed.

A study is being made in *Spain* as to the possibility of fluoridating the water supplies.

Topical applications of fluoride solutions, tablets or other means of fluoride prophylaxis, but not water fluoridation, have been introduced in several countries, namely : Austria, Finland, German Democratic Republic, Hungary, Italy, Switzerland and Yugoslavia (Republic of Slovenia).

In *Austria*, the prophylactic administration of fluorine has begun in certain schools in Vienna. It has been recommended that fluorine be administered to expectant mothers from the fifth month of pregnancy and to children up to the age of 13 and 14. The introduction of the people needed for fluoride prophylaxis is prevented by lack of finances. A Sub-Committee on Youth Dental Care has been set up in the " Österreichische Arbeitsgemeinschaft

für Volksgesundheit" (Austrian Society for Public Health), which is connected with the Austrian Ministry for Social Services. The working programme for this Sub-Committee includes the introduction of fluoride prophylaxis. At present fluoride tablets are used and in one town in Austria fluoridated milk was tried.

In *Finland* topical application of fluoride solutions is used to a limited degree and fluoridation of drinking water is planned in three or four cities.

The problem of fluoridation has aroused great interest in the *German Democratic Republic* in view of the increasing dental caries amongst the youth. In Halle, for example, experimental tests with exogenous and endogenous prophylactic fluorine have been carried out and in Karl-Marx-Stadt the introduction of fluoridation of the drinking water is planned. Since 1950, 3,000 children in Halle have been subject to topical fluoridation with sodium silico-fluoride for six years. Fluoridation by means of tablets is carried out with Government funds as a research measure.

In *Hungary* topical application of fluoride is not carried out in private practice. In 1949 and 1950, the school dental services in Budapest used topical applications, but stopped using this method on account of lack of time and doctors. For the time being, since 1953, only the Central Stomatological Institute administers fluorine to children between the ages of three and six years, with very satisfactory results. A 2% sodium fluoride solution is used for these topical applications. Water fluoridation projects have been accepted in Hungary for more than three years for two demonstration centres—Eger (population approximately 35,000) and Gyöngyös (population approximately 20,000). Fluoridation equipment has already been imported for Eger, but in spite of the fact that all the public health and other local authorities have given their consent, a start of the scheme has been prevented, owing to the resistance of the chief waterworks engineer. The Waterworks State Board has therefore proposed that the equipment be installed at Szolnok (population approximately 50,000), situated some sixty miles south-west of Eger. No approval has yet been obtained from the State Public Health Authorities to start fluoridation at Szolnok, but the matter is being dealt with by an expert committee. The type of equipment to be used is a sodium fluoride pulver feeder imported from the German Federal Republic. The water at Szolnok is supplied in one main pipe-line from the central Waterworks Filter Station. Basic caries data are available at Eger and Gyöngyös as well as at some other neighbouring

communities to be used as controls. The prevalence of dental caries is to be established in the near future for Szolnok.

The principles of fluoridation have been studied for a long time in *Italy* and tried out as regards its topical application to the teeth and the addition of fluoride salts to the normal daily diet. Up to the present, there do not exist, nor are there in the planning stage, any definite schemes for the introduction of a fluoride prophylaxis of dental caries on a national scale. Topical applications of fluoride salts are used in the health centres in Italy and fluoride tablets are supplied with a recommended dose of four 1 mgm. tablets per day.

In *Switzerland* the favourable reports on fluoridation from the U.S.A. have been closely followed since 1949 by the Swiss Federal Public Health Office. In 1949 the Swiss Dental Association set up a Fluoride Commission to check scientific fluoridation papers. The Commission investigated the areas where the water contains natural fluoride. In 1952 the Swiss Dental Association passed a formal resolution recommending fluoride prophylaxis, especially the fluoridation of drinking water. Water fluoridation equipment has been ordered by the town of Aigle (Canton of Vaud) and it is expected that it will start functioning this spring. A complete scheme for water fluoridation has been prepared for the city of Basle. Its implementation awaits agreement from the municipal authorities, but this is expected to be given this spring. There is also a water fluoridation scheme for the city of Berne. This project was postponed in 1954, owing to some doubts as to its innocuity, which were raised by medical circles and some members of the Medical Faculty of the University of Berne. As an interim measure, certain methods are being used. Fluoride tablets are distributed in schools, usually at the urge of some pharmaceutical firm or factory, which presumably for advertising reasons, delivers the tablets free of charge to schools. No results are available extending over periods of any length or withstanding scientific tests. Fluoridated table salt can be bought on demand in six cantons. This was begun in Zurich and Aargau in 1957. This type of fluoride prophylaxis is still in an experimental stage. No results have so far been published. Very little fluoridated table salt is purchased by the public in spite of intensive advertising in some parts. In one town a solution of sodium fluoride is added to milk in some instances. A few dentists give topical applications of a fluoride solution, but there is no collective treatment in schools.

In the republics of *Yugoslavia*, fluoridation of the teeth of young people has met with great interest in that of Slovenia. The head

of the Children's Department at the Stomatological Clinic in Ljubljana was directed to organise the fluoridation of the teeth of young people. Various methods have been applied—the Armstrong method and the administration of tablets. It is hoped to apply fluorides to the teeth of all school children as soon as possible and there appear to be no obstacles to the scheme. The school children are given one tablet of home-made calcium fluoride three times a day. The tablets are also given to expectant mothers in the same dosage. Children of 1 to 7 years are given two tablets a day—one tablet containing 0.4 mgm. of calcium fluoride. All drinking water supplies in Slovenia have been examined to ascertain their fluoride content and one engineer-chemist was sent to Germany to Professor Knappwost, a biochemist in Tübingen, to learn an up to date method for examining the amount of fluoride in water, blood, urine and food. In the other republics of Yugoslavia, fluoridation has not yet been undertaken on a similar scale, as they are awaiting the results of the schemes in Slovenia, where fluoridation only commenced a year ago and in the course of the year more than thirty million tablets were distributed.

The fluoridation of water supplies, experimentally or otherwise, is to be found in the following European countries : Belgium, Czechoslovakia, German Federal Republic, Great Britain, Netherlands and Sweden.

In *Belgium* fluoride-prophylaxis forms the subject of an experimental study conducted in various villages in the district of Namur, due to the initiative of an individual practitioner. Each year, clinical and radiological investigations are carried out in two groups of villages, one receiving no fluoride, the other obtaining it through the public water supplies, except in one village where tablets are the vector used, these being distributed by the primary school teachers. An original and exceptionally simple apparatus was designed by the engineer of the National Waterworks Society, which has functioned without any trouble since it came into service three years ago. Apart from this study, the authorities of another village adjoining Brussels have contacted the Belgian Research Committee on Fluorine and Dental Caries Prevention. Informative lectures resulted from this, which appear to have assured the support of the local doctors as well as that of the administrative authorities. The Belgian Committee is awaiting the final decision of these authorities, although this may have been delayed a little by recent Government changes. The Belgian Committee is particularly interested in fluoridation through the drinking water

and it looks upon fluoridation by tablets as a substitute for use if the first method is not possible. A campaign is being conducted in Belgium for the distribution of fluoride tablets to school children, under the impulse, often energetic, of certain pharmaceutical firms. The Belgian Committee does not support this campaign in view of the existing uncertainty as to the method of distribution adopted and the essential medical and dental control.

Fluoridation of drinking water was started in 1958 in two towns in *Czechoslovakia*. In one, fluoridation is already in progress ; in the other, it is used experimentally and at the moment only small doses are employed. In a short time optimum doses will be used in the latter scheme. In one case a dry dosage of natrium silico-fluoride is employed and in the other the wet method of natrium fluoride with an apparatus of Czechoslovak manufacture. For controlling the amount of fluoride in the water, the ORCA method is used. Caries reduction and the influence of fluorine on the endemia of struma is being controlled to ensure good co-ordination between the iodide and fluoride prevention. It is hoped that a time-limit of two to three years will be sufficient for the control of this second point and after this time the fluoridation of the drinking water will be well under way on a large scale. For scientific purposes, other factors are also being studied. The fluoridation of other foodstuffs is for the moment not being carried out and is not even being considered for the near future. As far as fluoride tablets are concerned, the possibility of their use is being investigated this year. Topical application of fluorides was carried out on a large scale in Czechoslovakia a few years ago. Although the method was quick, it had no great effect and it was therefore abandoned. Topical application is now used in individual cases only, mostly according to Knutson's method.

Fluoridation programmes are also carried out in the *German Federal Republic*, but only as small local enterprises rather in the nature of research programmes. They have been going on for seven years. They mainly serve to collect observations and experience in order to check information coming from other countries, especially the U.S.A., about successful results recorded. According to the German Commission on Fluoridation, there are about 80,000 people connected with fluoridation research. A considerable number of them who have left research work will not be available for long-term observations and statistical analysis. Further local fluoridation programmes are being planned. The first big programme will be implemented in Hessen and will cover

the whole State, where fluorine will be administered to one section of the school children. No more detail can be given yet. The fluoridation programmes include fluoridation by means of tablets, topical application and fluoridation of drinking water. By far the most important method in Germany is fluoridation by means of tablets. Various preparations are used, mainly compounds. From the most recent research programmes it can be seen that the fluorine element in comparison with other trace elements is only of secondary importance. Some compounds are also used without any fluorine content. The term " fluoridation " is therefore no longer applicable to these research programmes, but they are still carried out under this name. The people concerned in this work are included in the aforementioned figure of 80,000. In research into the reduction of caries by means of fluoridated drinking water carried out in Kassel (State of Hesse), a caries reduction of approximately 30% was recorded. This research programme has been carried out since December, 1952, in one sector of the town of Kassel, known as Wahlershausen. To complete the information it should be mentioned that the drinking water at some of the airports occupied by American troops is fluoridated. Topical application does not arise as a mass measure. For this reason research programmes in this field of fluoridation are being stopped. As an example of local fluoridation programmes, in the State of Schleswig-Holstein children aged three to five years receive fluoride in tablet form and experiments are being carried out with fluoridated milk, which it is intended to give to children between the ages of three and six.

In *Great Britain* at present there are three demonstration studies in progress as regards water fluoridation. These are operating under the auspices of the Ministry of Health. One is in the dormitory area, Watford, having as a control a similar area in Surrey, their populations being 70-80,000. The second is in Wales in the Isle of Anglesey, population, 50,000, which has two water supplies, one unfluoridated, serving as a control for the other area. The third is in Scotland, at Kilmarnock, population 42,000, with Ayr as a control. Apart from these, a number of local health authorities are interested, but they have been advised to hold up their plans for the time being until results from the demonstrations studies become available. There were originally four demonstrations, but unfortunately, one local authority (Andover) abandoned its arrangements after changes on the Council, largely due to opposition from the British Housewives League and other

opponents of fluoridation. The demonstrations were instituted after a special Commission which visited the U.S.A. some years ago had reported on fluoridaton in that country. Two methods are used for fluoridating the public water supplies, each being equally satisfactory in maintaining the optimum level of 1 p.p.m. of fluoride. Where the supply is small, pumping less than 70,000 gallons of water per hour, a solution feed of sodium fluoride is used, but for larger supplies a solid feed unit using sodium fluorsilicate is employed. The solution of sodium fluoride is near saturated and prepared in a continuous flow saturator developed in Great Britain. The strength of the solution produced does not vary and is about 3.5% sodium fluoride. With solution feed equipment a measured amount of 3.5% sodium fluoride solution is proportioned to the water supply, and dissolved rapidly in a continuous flow solution tank, whence it passes into supply, either by gravity or by a pump feed.

In the *Netherlands*, Tiel is the only town with fluoridated water. This is an experimental project started in March, 1953. Its aim is to evaluate the dental and medical effects of water fluoridation on Dutch living habits. Culemborg serves as the fluorine-free control town. Tiel has a population of 17,000 inhabitants. Sodium fluoride (2%) is added in salt form to the water through a volumetric feeder. Topical application of 2% sodium fluoride solution is employed in the school dental service in Amsterdam. The use of fluoride tablets on a large scale, that is in schools, etc., is not allowed.

In *Sweden* fluoridation of drinking water has been done as an experiment in the city of Norrköping (population approximately 90,000). Several cities and villages have applied for permission to fluoridate their water supplies, but up to the present, none has been granted the right, apart from Norrköping. In this project a solution feeding sodium silico-fluoride is used in one of the two pipes supplying the city. The caries reduction shown agrees with American figures. A small town in South Sweden has, it is interesting to note, by means of naturally fluoridated water adjusted the fluorine content to 1 p.p.m. from practically zero. Base line investigation has been undertaken and follow up studies are planned. Fluoridation by vectors other than water, e.g. milk, salt, tablets, is on a preliminary experimental basis. Great interest is shown in topical application and large scale experiments are planned. An interesting study of the effect of supervised tooth brushing with sodium fluoride has been completed within the

School Dental Services of Stockholm. The result has been surprisingly good and it has proved possible for one dentist aided by one chairside assistant to treat 4,500 to 5,000 children a month.

It is understood that a large scale examination of the long term results of the effectiveness of tooth fluoridation is being carried out in the *U.S.S.R.* It is not known exactly what methods are covered in this examination.

Before completing this review of the extent of fluoridation in Europe, it should be mentioned that in England, Greece, Hungary, Italy, Portugal, Spain, Sweden, Switzerland and the U.S.S.R., there are known to be numbers of areas where the domestic water supplies may contain appreciable amounts of fluorides or where the fluorine-dental caries relationships might be profitably studied. On the other hand, chemical analyses suggest that fluorides rarely occur in appreciable amounts in Czechoslovakia, Germany, the Republic of Ireland and the Netherlands.

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BOOKS

RECENT TRENDS IN FERTILITY IN INDUSTRIALISED COUNTRIES. (Population Studies No. 27. United Nations, Dept. of Economic and Social Affairs. New York. 1958. Pp. 182. Price 14s.).

This excellent study uses data from 20 countries of European culture, the major ones in Europe with the notable exception of the U.S.S.R., Australia, New Zealand, U.S.A. and Canada. In general the crude birth rates of these countries showed a remarkable similarity in trend, with a decline starting late in the nineteenth century, continuing till the mid-1930's. During the first world war there was a sharp decline compensated by a short-lived recovery immediately afterwards in 1920-1921. The second world war caused a disturbance similar in its initial decline, but differing in the recovery which began while fighting still continued. The immediate post-war years saw the "baby boom" of 1946-1947, with a subsequent decline till about 1950, since when crude birth rates seem to have stabilised.

Interest centres on whether the recent stabilisation in birth rate indicates a check in the secular trend in fertility which started 70 years ago, and this study answers this by an analysis of the factors which have influenced recent changes. The general ageing of the population seems to have little effect. On the other hand one of the most important factors is a decrease in the average age of marriage, resulting in a larger proportion of the births being to young mothers and at low parities. This could account for part, but not all, of the "baby boom". Some part is probably the result of a change in timing so that married couples tend to build their families earlier in marriage. Both these changes could result in a temporary increase in birth rates without any increase in the ultimate size of completed families. This has been studied by cohort analysis of the cumulative number of children born to parents married at different calendar periods. This is necessarily incomplete, as many of the mothers contributing to the baby boom of 1946-1947 have not yet completed their reproductive period, but so far it suggests that the secular decline in fertility has come to a standstill, that fertility in marriage in Europe has been stabilised and may even be increasing in the non-European countries included in this study.

J. KNOWELDEN.

THE FAMILY MEDICAL ENCYCLOPEDIA, by Justus J. Schifferes. (A Health Education Council Book. Little, Brown & Co., Boston & Toronto. 1959. Pp. 617. Price $4.95.)

In this country the general practitioner has reason for apprehension when patients explain that something they did or did not do was "according to the Doctor's Book", for a generation ago, there were a number of indifferent publications which were as often misinterpreted as read with profit by the lay public. To be appreciated, therefore, a new work of this kind has to be good, and this one is.

The title describes the book well. It is an encyclopaedia of information to be consulted when a problem arises, or to be leafed through for the interest of the matter which it contains. Unlike the worst of its predecessors the text is written to supplement the advice given by the family doctor, and is emphatic that no written word can replace him. Descriptions and interpretations are clear and sensible, though the reader will find the American idiom unfamiliar at first.

Subject-headings are arranged alphabetically and there is a clever system of cross-referencing which encourages the reader to extend his first impressions. Though the book can be used as a manual of first aid in emergency, its real value is in teaching the principles of adult health and in the advice on healthy living which it contains.

The book can be recommended to patients, for whom it is safe, and to their doctors who will find in it the answers to many of their patients' unspoken questions.

R. J. F. H. PINSENT.

PERCEPTION AND PUBLIC HEALTH, by Gordon W. Allport, and THE HEALTH OFFICER AND COMMUNITY POWER GROUPS, by Julius S. Prince. (Health Education Monographs No. 2—Society of Public Health Educators, Oakland, California. 1958. Pp. 31. Price $1.00).

Health workers are becoming increasingly aware of the importance of factors which affect the absorption of knowledge, but the teaching of the psychologists on this subject is not always easily understood. In *Perception and Public Health*, Professor Allport examines the question "does the receiver hear and comprehend the health message as the health educator intends?" with admirable lucidity. His insistence on individual differences in perception and "proception" (which he defines as the total process of personally relevant behaviour from input to act) is a useful reminder that too much reliance should not be placed on mass media and campaigns which lack the personal approach. And what better text for the health educator than his forthright statement that "to assume that the patient's perceptions are those of scientific medicine is certainly an error; but to assume that he neither wants nor deserves the truth is intolerable condescension"?

In *The Health Officer and Community Power Groups* Dr. Prince, a District Medical Officer, describes the methods used to discover the attitudes towards a public health programme of influential groups and individuals in an American town. It is difficult to judge whether the results justified the considerable work involved (including over one thousand hours of interviewing), as a full analysis of the data is not presented in this publication.

TERESA SPENS.

THE SUBNORMAL CHILD AT HOME, by Fred J. Schonell, J. A. Richardson and Thelma S. McConnel. (Macmillan & Co., for the Australian Council of Organisations for Subnormal Children. 1958. Pp. 165. Price 5s.)

This book is primarily for Australian (and particularly for Queensland) readers, and there is a tremendous emphasis on hygiene and cleanliness, necessary in a tropical climate.

The subnormal child is looked on from a rather limited educational point of view. The tone of the book is didactic, and psychological insight is rarely apparent. It is no use just telling a mother who does not want her child to go away to an Occupation Centre "You must sink your own feelings because it is best for the child".

One gets the feeling that the authors know very little about babies or children under five. One is a little taken aback by the advice that kissing is undesirable from a health point of view. The authors seem not to know of the amount of research carried out and going on at present in the United Kingdom, or they would not make statements saying that idiots are not really trainable, when reading of the literature would show much to the contrary. One gets the impression that this book has been put together hurriedly to meet a demand.

The very debatable advice is given that children should be encouraged to be right-handed. It is said that one of the first lessons to be learnt by a child is obedience to his parents, whereas one would think that the first lesson a child should learn is that his parents love him. Yet, in a chapter on obedience and discipline, love and stability are not mentioned, although consistency is stressed.

PETER SECRETAN.

THE O-STRUCTURE — INTRODUCTION TO PSYCHOPHYSICAL COSMOLOGY, by C. C. L. Gregory and Anita Kohsen. (Institute for the Study of Mental Images, Gally Hill, Church Crookham, Hants. 1959. Pp. 141. Price 21s.)

In our quest for knowledge, it behoves us to explore every avenue in search for new facets to current problems. In the world of physics the Newtonian universe has long been discarded and additional time dimensions have been introduced. Here the authors have courageously and very ingeniously, using the concepts of modern physics, postulated a 5-dimensional universe made up of micro-events as bricks and using two time dimensions, one, representing events, the other indicating entropy. These events range from the macro-cosmic activity of galaxies to atom activity and are set out in the form of a periodic scale. Ranging

between these two extremes must fall the biological organisation (biological hierarchy). The authors have then introduced a co-ordinating system, the O-Structure, into this 5-dimensional universe in order to study the various hierarchies, especially the biological hierarchy in this world pattern.

But departures are made from pure physics and other spheres are introduced, such as the worlds of the gambler (which represents the random element), the astrologer and technician (for objective events), the mystic (for subjective events) and finally the world of the biologist. They even stray into the realms of para-psychology, psychic science, and finally psychiatry.

The authors endeavour to correlate world events by their O-Structure into a study which they introduce as "psychophysical cosmology" and suggest in their last chapter on morbidity that this approach may help to solve many health problems, especially in the world of psychiatry. Tribute must be paid to the authors for showing an unusual approach in the world of science, but certain criticisms are inevitable. They plunge *in medias res* and the notes and references are rather formidable. The last chapter, which shows promise, could have been considerably developed, and as the authors themselves admit, has been rather hurried. Nevertheless, Nature does not yield her secrets readily and to those who live in the 3-dimensional territory between the *pons asinorum* and the differential calculus, this book offers a challenge and an adventure.

W. G. SMEATON.

LIVE WITHOUT TENSION, by F. A. Hornibrook. (Souvenir Press. 1958. Pp. 93. Price 10s. 6d.)

This book is a further discourse on personal health by the author of *The Culture of the Abdomen*. Written in the same forthright and direct style, it is concerned with those aspects of modern life leading to strain and tension. Pointers are given to ways and means of overcoming the disadvantages of twentieth century living, including such factors as fresh air, diet, exercise, rest and recreation. The advice is in most cases sound and based on a practical approach. Not all would agree with some of the ideas put forward, for instance, the view concerning the desirability of prolonged immersion in hot baths. The text is well illustrated with humorous drawings by George A. Craig.

Written for the layman, the material is presented in a light and entertaining way, and for this reason it can also be commended to professional health workers who may find the stimulating approach to health teaching suggestive of new ideas.

F. ST.D. ROWNTREE.

MIGRAINE CLINIC—An eight-year survey of preventive treatment, by E. Harvey-Sutherland (St. Catherine Press Ltd. 2nd edition. 1958. Pp. 98. Price 4s.)

The principal object of this little book would appear to be the issue of a challenge to the medical profession in general and the Ministry of Health in particular to show why a few thousand of the millions of pounds spent on the N.H.S. should not be devoted to the setting up of migraine prevention clinics. The author produces evidence to show that there are "6,000,000-odd sufferers—about 200,000 of whom have to spend a day a week in bed" and he claims that "success in 75% can be assured" in the Eileen Lecky Migraine Clinic at Putney.

One of the arguments used in favour of establishing these migraine clinics is that the disease is so complex that no one method of treating it will prove successful in all cases, so that a combination of many specialisms is required for one disease entity. The medical reader will be sorry that no details of the treatment used at the Clinic are given, except in the most general terms. Presumably other medical and dietetic therapies are used as well, but no specific mention is made of them.

Non-medical readers will be interested in the success stories contained in the book, but will be disappointed if they expect to find any helpful advice on how they may prevent their own periodic headaches, short of attending the Eileen Lecky Migraine Clinic themselves.

GUY DAYNES.

OVERFED BUT UNDERNOURISHED, by H. Curtis Wood, Jr. (Exposition Press, Inc., New York. 1959. Pp. 95. Price $2.50)

Here is a book on the nutritional aspects of health and disease written for the American public by a physician who is not a dietetic "crank". The people of Britain and America are constantly being urged by advertisers to take this or that vitamin and mineral supplement to keep healthy. At the same time, many doctors say that such preparations are required only by a few special cases. The author steers a careful course between these conflicting views, showing where lies what he believes to be the truth. Nevertheless, the book is not without challenging statements. "Most of us feed our pets and domesticated animals better than we do our children or ourselves" and "Many diseases, particularly those of a degenerative type, which plague our declining years, are the end result of long-term dietary deficiencies," are examples. This short book will be enjoyed by anyone interested in dietetics yet still possessing an open mind.

GUY DAYNES.

FLANNELGRAPHS

CANCER.—A Flannelgraph Cut-Out Folder. Drawn by John Wakefield, Executive Officer of the Manchester Committee on Cancer. (Available from the Manchester Committee on Cancer, 558 Wilmslow Road, Manchester 20. 1958. Price 17s. 6d. (U.S.A. $2.50) post free).

For some time the panel of lecturers in the Manchester Committee on Cancer Educational Project have been using three flannelgraphs to illustrate their talks and discussions. These are now generally available for wider use. The first illustrates the antiquity of cancer with drawings of prehistoric life and the evidence from ancient Hindu and Egyptian remains. The growth and spread of untreated cancer is illustrated in the second part with the analogy of emigration to distant islands. The last demonstrates some of the warning signs of cancer. With lectures and discussions on this subject the relief of any tension is very desirable. Visual aids can help in this relief as well as adding interest and point to the unfolding story. The reprint and notes accompanying the flannelgraphs are clear and useful. The illustrations are partially coloured, and have gummed seals to complete them after cutting out. Throughout emphasis is laid upon the most accessible and curable cancers of the skin, breast and womb.

D. L. PORTER.

TUBERCULOSIS.—A Flannelgraph Cut-Out Book. Drawn by Stella Schmolle in association with the National Association for the Prevention of Tuberculosis. (The Sheldon Press. 1958. Price 5s.).

This flannelgraph has been prepared for the health education of the public in African communities concerning the cause, treatment and prevention of tuberculosis. As a visual aid it will be useful in the hands of a skilled and accepted teacher with a literate group. With the more rural, illiterate or poor, difficulties may be encountered as the illustrations and text concern a successful and literate family. An imaginative teacher, however, will be able to adapt this story to local conditions quite usefully. The illustrations are coloured, attractive and accurate, and the text is explanatory and adequate as a guide and synopsis.

D. L. PORTER.

FILMSTRIP

HOME SAFETY 8 : THE 3 - 4 YEAR OLDS. Camera Talks production, presented by the Central Council for Health Education. Colour. 20 frames. Price £2 12s. 6d.

This new home safety filmstrip with teaching notes is a welcome addition to the series. It has attractive illustrations and these will stimulate the viewer and promote discussion. Many of these pictures have a moral with which every member of a family should be acquainted. The filmstrip draws attention to those things which many parents may not have considered dangerous, giving a real picture of home safety. The section concerned with tidyness emphasises care of possessions as well as safety, and the illustrations of the kitchen, bathroom and playground give useful talking points for discussion. The last five frames are concerned with "curb drill", and seem out of place in this strip, although this can never be emphasised too much or taught too early. As they are included, however, mention should be made of where to cross as well as how, i.e. not on a corner or near parked traffic, and an oblique photograph or two would illustrate these points. The approach of this home safety filmstrip is positive, and it should be widely used.

D. L. PORTER.

FOOT HEALTH EDUCATIONAL BUREAU

In view of the lack of financial support formerly given by the shoe and leather industry, the Council of the Central Council for Health Education were reluctantly compelled to close the Bureau on 31st March, 1959. Enquiries regarding foot health should continue, however, to be addressed to the Medical Director of the Council, who will be pleased to offer advice to anyone interested in the subject.

Printed in Great Britain by Jordison & Co. Ltd., Middlesbrough & London.